DOCUMENT RESUME

ED 271 068 HE 019 449

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TITLE A Report on the Retrenchment Activities of Colleges and Universities.
INSTITUTION National Center for Higher Education Management Systems, Boulder, Colo.
SPONS AGENCY National Inst. of Education (ED), Washington, DC.
PUB DATE Nov 83
CONTRACT 400-80-0109
NOTE 83p.
PUB TYPE Reports - Research/Technical (143) -- Tests/Evaluation Instruments (160)

EDRS PRICE MF01/PC04 Plus Postage.
DESCRIPTORS *Change Strategies; College Administration; *Declining Enrollment; Financial Policy; *Financial Problems; *Higher Education; *Policy Formation; Problem Solving; Questionnaires; Resource Allocation; *Retrenchment; School Surveys

ABSTRACT

Responses of colleges and universities to declining revenues and enrollments were investigated, based on a 1983 survey of 334 four-year institutions. Scalogram analysis was employed to determine whether there was a hierarchy of institutional responses to enrollment/revenue decline and whether declining and nondeclining institutions can be differentiated on the basis of their actions. Also considered was whether there were natural groupings of institutional responses to declining enrollments and revenues. The degree of association between cutback actions and the pattern of association between different retrenchment activities were assessed using factor analysis. Correlation analysis was used to examine differences between respondents' perceptions of institutional environments, form and functioning, and outcomes in declining and nondeclining institutions. Finally, regression analysis considered the extent to which institutions engaged in across-the-board versus selective cuts as they experienced declining revenues, and the extent to which resources were reallocated among different areas of institutional operations. No implicit hierarchy of response that reflected the severity of decline was found. Additional findings are presented, along with study questionnaires. (SW)

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A Report on the Retrenchment Activities of Colleges and Universities

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November, 1983

The research reported here was supported by a contract (#400-80-0109) from the National Institute of Education.

A Report on the Retrenchment Activities of Colleges and Universities

Summary and Conclusions

This report discusses the results from four exploratory analyses designed to examine two questions: 1) How do institutions respond to declining revenues and enrollments, and 2) Are there differences between growing and declining institutions in individuals' perceptions of institutional behavior? We consider the analyses to be exploratory for a number of reasons. First, the analyses discussed in the first three sections are a first pass at manipulating the data collected in a 1983 survey of 334 four-year colleges and universities. Second, their is little consensus within the literature as how to define decline. For example, should one year's decrease in enrollments or revenues be defined as decline? Or, should decreasing enrollments or revenues be observed over a number of years before it is defined as decline. Third, HEGIS financial and enrollment data have not been released for all the years included in the survey study. Given these constraints, we have treated these analyses as an opportunity to experiment with different definitions of decline.

Each of the four analyses address different issues. The first analysis employs a scalogram technique to examine whether there is a hierarchy of institutional responses to enrollment/revenue decline. It also examines whether decline and nondecline institutions can be differentiated on the basis of actions that they have taken over a specific period of time. The second analysis examines whether there are natural groupings of institutional responses to declining

enrollments and revenues. Factor analysis was employed to assess the degree of association between cutback actions, and to determine what the pattern of association was between different retrenchment activities. The third analysis examined whether there were statistically significant differences between respondents perceptions of institutional environments, form and functioning, and outcomes in decline and nondecline institutions. The fourth analysis was designed to examine the relative impact of a set of factors on the extent to which institutions engaged in across-the-board versus selective cuts as they experienced declining revenues, and the extent to which resources are reallocated among different areas of institutional operations under these conditions.

Results

1. The scalogram analysis indicated that there is no hierarchy of institutional responses to declining revenues and enrollments.

2. The factor analysis revealed that there are some associations between the responses chosen by institutions experiencing declining revenues or enrollments. For example, a factor was identified and labelled "personnel reduction." Institutions that selected one personnel reduction option, such as reducing secretarial support, were also likely to select other similar personnel options, such as reducing staff support, and reducing the number of student services personnel. Three other factors identified in the analysis were an "elimination of off-campus programs" factor, a "major reductions in institutional operations" factor, and a factor that appeared to be related to an institution's efforts to tap into the market for non-traditional students.

3. The results of the correlation analysis revealed that there are a number of significant differences in the perceptions of respondents at decline and nondecline institutions that were concerned with the institution's environment, the institution's ability to compete with other institutions for faculty and students, leadership credibility, and the satisfaction of organizational constituencies. Also notable were the findings of no significant differences on traditional measures that reflected organizational form and function, such as in perceptions of institutional specialization, centralization, turnover, rewards and feedback, and resource allocation decision styles.

4. The results of the regression analyses indicated that a number of factors affect an institution's propensity to engage in across-the-board cuts versus selective cuts accompanied by resource reallocation. Specifically, institutions were more likely to engage in selective cuts as the severity of revenue decline increased if they were privately controlled, and if they were two-year institutions. Institutions were more likely to engage in minimal reallocation or across-the-board cuts if they were public, four-year, and if the duration of an episode of decline stretched over a number of years.

Conclusions

The results of these four analyses can be interpreted in the following way: The selection of retrenchment options is not nearly as orderly as it has been portrayed in the literature. There is no implicit hierarchy of response that reflects the severity of decline encountered, and less drastic responses, such as restricting travel, telephone and supply purchases, do not necessarily precede more drastic

responses, such as declaring financial exigency. It also appears that the selection of institutional responses to declining revenues and enrollments is asynchronous, and the selection of specific cutback responses is largely dependent on the peculiar factors that constrain each institution's options. While there appears to be minimal regularities in the specific actions employed by institutions faced with declining revenues and/or enrollments, there are clearly differences in the perceptions of individuals at decline and nondecline institutions.

Moreover, the pattern of findings are consistent with the earlier work of the Organizational Studies Division, particularly with Zammuto and Cameron's model of environmental decline and organizational response and with Chaffee's concept of interpretive strategy. These preliminary findings suggest that the use of these conceptual frameworks in future analyses will yield significant information on the nature of organizational decline and the nature of effective responses to decline.

Research is presently being initiated in these directions, and will continue as future releases of HEGIS financial and enrollment data are made available. When this data becomes available later this year, it will be possible to determine the extent to which perceptions of enrollments and revenue experiences match the actual changes in institutional enrollments and revenues; develop more fine-grained operational definitions of enrollment and revenue decline; determine how the perceptions of individuals are affected by the reallocation of resources over time; how differences in organizational form and

function affect reallocation; and what the effect of the reallocation of resources is on subsequent institutional performance.

INTRODUCTION

This exploratory study employed four different analytical techniques to examine two broad questions: 1) how do institutions respond to declining revenues and/or enrollments, and 2) are there differences between growing and declining institutions in individuals' perceptions of institutional behavior. Briefly, the first analysis employed a scalogram technique to examine whether there was any inherent hierarchy in the responses selected by institutions when they encountered declining revenues and/or enrollments. The underlying question was whether institutions selected less drastic responses, such as reducing the number of courses offered, before selecting more dramatic ones, such as declaring financial exigency. The second analysis examines the same type of question but in a different manner. Factor analysis was employed to determine how institutional responses to declining revenues and/or enrollments grouped together. The underlying question was whether there were any patterns in the types of retrenchment options selected by institutions.

The third analysis examined whether there were discernable differences in the perceptions of individuals at declining institutions and those at growing institutions. Correlation analysis was used to examine a selected set of questionnaire items, which reflected different aspects of institutional environments, functioning, and outcomes, to determine whether significant differences existed in respondent perceptions. The fourth analysis examined factors that affected the relative use of across-the-board versus selective cuts when institutions experienced declining revenues. As such, the final

analysis provides a first step toward better understanding the process of resource reallocation during periods of financial distress.

Data for the first three analyses were obtained from a 1983 survey of administrators, faculty, and trustees in 334 four-year colleges and universities. The survey consisted of two questionnaires: one that was sent to all respondents that asked them for their perceptions regarding various facets of their institution, and a supplemental questionnaire that was sent only to the institutional research officers. The second questionnaire requested factual information regarding the occurrence of specific events at their institutions between 1978-79 and 1982-83. The instruments are included as Appendices 1 and 2. Over 3,400 individuals responded to the first questionnaire. Data from this instrument were aggregated to the institutional level for the following three analyses. Institutional research officers from 269 institutions responded to the supplemental questionnaire.

Institutions were selected for inclusion in the questionnaire study on the basis of four characteristics: enrollment size, institutional control, enrollment change, and the presence or absence of graduate programs. Institutions were considered eligible for the study if their full-time equivalent enrollments ranged between 200 FTE and 20,000 FTE students. Smaller and larger schools were eliminated from the potential sample. The resulting sample is representative of the population of colleges and universities within this size range. Selection on the basis of institutional control was made to ensure that the relative proportion of public and private institutions included in the sample was representative of the population of colleges and universities as a whole. The presence or absence of graduate programs

criterion was also included to ensure that the distribution of institutions with and without significant graduate programs approximated that of the population as a whole.

The final criterion was concerned with the changes in institutional enrollments between 1978-79 and 1981-82. Institutions were separated into three groups, which reflected whether their enrollments had grown, remained stable, or declined during this period on the basis of Higher Education General Information Survey (HEGIS) enrollment data. Schools that had experienced declining enrollments were overrepresented in the sample selection process for the purpose of ensuring that the decline subsample would be large enough for meaningful analyses. Overall, the resulting sample of institutions included in the study is representative of the population within the limits set by the selection criterion. Data for the fourth analysis were drawn from the HEGIS financial survey for the years between 1972-73 and 1980-81, and the sample included all institutions in the HEGIS universe.

Before discussing the results of these analyses, one fundamental issue needs to be addressed. This issue concerns the definition of declining and nondeclining institutions. There are two aspects to this issue. One concerns the criteria for identifying declining and nondeclining institutions; the other focuses on delimiting the starting and ending points for determining whether decline occurred. The first problem has to do with the fact that there is no unequivocal definition of what constitutes decline. Some studies use revenues, others have employed enrollments, and still others have used a combination of both.

The second problem is one of deciding how long a period of decreasing revenues, enrollments, or both constitutes an episode of decline. For example, does a single year's decrease constitute decline? Or, should only a sustained decrease over a number of years be defined as decline? This particular problem is excerbated by the fact that HEGIS financial data for the last two years on which the survey responses are based were not available at the time the analyses were undertaken.

We decided to treat these classification problems as an opportunity in the process of exploratory analysis and experiment with different classification techniques, each of which appear to be appropriate for the specific analysis, given the data at hand. As a result, four different classification techniques were employed in the analyses discussed in the following sections. In the scalogram analysis, no a priori judgments were made concerning whether an institution had experienced or not experienced decline. The decision was based on the fact that if there was any underlying order in institutional responses to decline, the results of the analysis could be used to separate decline and nondecline institutions. In short, institutions that had not experienced decline would receive low scale scores, indicating that they had selected few if any of the retrenchment activities. In contrast, decline institutions would receive higher scale scores, indicating that they had engaged in a number of retrenchment activities.

The factor analysis and the correlation analysis employed variants of the same classification system to select and group institutions. In these two cases, both HEGIS and perceptual data were used to construct

the classification system. In the factor analysis, institutions were included in the sample if there was complete agreement by respondents at the institution that either enrollments or revenues had declined during the period 1978-79 and 1982-83. Institutions were also included in the sample if HEGIS financial and enrollment data revealed that either their revenues or enrollments had decreased by more than five percent during the period between 1978-79 and 1980-81.

In the case of the correlation analysis, institutions were classified as nondecline institutions if there was complete agreement that the institutions enrollments or revenues had not declined during the period 1978-79 and 1982-83, or if the HEGIS data showed that revenues or enrollments had increased by more than five percent between 1978-79 and 1980-81. Conversely, institutions were classified as having experienced decline if there was complete agreement among the respondents that their institution's enrollments or revenues had declined between 1978-79 and 1980-81. The resulting classification yielded four groups that were included in the analysis: 1) perceptual enrollment decline/nondecline, 2) perceptual revenue decline/nondecline, 3) HEGIS enrollment decline/nondecline, and 4) HEGIS revenue decline/nondecline groups. Analysis of these four separate groups allowed for an examination of: 1) whether any differences existed between decline/nondecline institutions in terms of perceptions of institutional functioning, and 2) what the potential effects of using different techniques for classification were on the results.

The regression analysis approached the problem differently in that the topic of interest was resource allocation under conditions of

declining revenues. Thus year-to-year changes in revenues were used as the basis for constructing the study sample. Institutions entered the sample as a data point for each year that its revenues declined from the previous year for the years between 1975-76 and 1980-81. Each of the classification techniques is discussed in more detail in later sections of the report.

Finally, it is important to emphasize that these classification techniques are, at best, imperfect, and that the results of the analyses need to be treated tentatively. Further analyses using a combination of up-to-date HEGIS enrollment and financial information and perceptual data from the questionnaire study will yield more definitive results.

SCALOGRAM ANALYSIS

The first analysis was concerned with determining whether there was an underlying continuum in the responses made by institutions experiencing declining revenues or enrollments. The logic for this analysis was based on the reasoning of Mingle (1982), who suggested that the severity of retrenchment activities undertaken by institutions experiencing cutbacks would match the severity of those cuts. Mingle presented a listing of institutional responses to cutbacks that are arranged by the severity of the cut, which is reproduced in Figure 1. The logic of Mingle's reasoning is intuitively appealing; the more severe the cut, the more drastic the response.

We decided to empirically examine this idea by incorporating a modified version of Mingle's listing of institutional responses into our supplemental data questionnaire, which is attached in Appendix 2. Institutional research officers at 269 institutions in the survey study

Figure 1

INSTITUTIONAL RESPONSES TO CUTBACKS

RESTRICT TRAVEL, TELEPHONE, SUPPLY PURCHASES

POSTPONE EQUIPMENT PURCHASES

CUT LIBRARY BUDGET

TIGHTEN TENURE REQUIREMENTS

REDUCE ENERGY COSTS THROUGH CONSERVATION AND/OR TECHNOLOGICAL IMPROVEMENTS

EMPLOY PART-TIME IN PLACE OF FULL-TIME FACULTY

REDUCE SECRETARIAL STAFF

DEFER MAINTENANCE AND RENOVATION PROJECTS

ADJUST INVESTMENT POLICY TO MAXIMIZE SHORT-TERM GAINS

REDUCE COURSE OFFERINGS; INCREASE CLASS SIZE

INCREASE TUITION, ROOM AND BOARD FEES

INITIATE A STUDENT HEALTH FEE OR INCREASE OTHER SPECIAL FEES

REQUIRE LARGER/EARLIER DEPOSITS

REDUCE NUMBER OF RESIDENT ADVISORS, COUNSELORS, OTHER STUDENT SERVICES PERSONNEL

ELIMINATE GENERAL FUND SUPPORT OF INTERCOLLEGIATE ATHLETICS

INITIATE SPECIAL ONE-TIME SURCHARGES TO STUDENTS

LEASE, CONVERT, OR CLOSE EXCESS DORMITORY SPACE

IMPOSE A HIRING FREEZE--REDUCE COSTS THROUGH ATTRITION

CUT STAFFS OF PUBLIC INFORMATION, ALUMNI OFFICES

REDUCE OR ELIMINATE SUMMER SCHOOL OFFERINGS

TERMINATE PROFESSIONAL ADMINISTRATIVE STAFF (ASSOCIATE DEANS, ASSISTANT VICE PRESIDENTS, ETC.)

CLOSE THE UNIVERSITY PRESS

CLOSE THE NATURAL HISTORY/ART MUSEUM

ELIMINATE THE INTRAMURAL SPORTS PROGRAM

ELIMINATE OFF-CAMPUS PROGRAMS

REORGANIZE GOVERNANCE STRUCTURE--ELIMINATE "COLLEGES," "DEPARTMENTS;" REPLACE WITH "DIVISIONS"

ELIMINATE LOW PRODUCING/LOW PRIORITY ELECTIVE COURSES; TERMINATE NONTENURED FACULTY WHO TEACH THEM

DISCONTINUE LOW PRIORITY ACADEMIC PROGRAMS; TRANSFER TENURED FACULTY TO RELATED DEPARTMENTS

DECLARE A STATE OF FINANCIAL EXIGENCY

CLOSE MAJOR ACADEMIC UNITS, DEPARTMENTS, COLLEGES, SCHOOLS

TERMINATE TENURED FACULTY

MERGE INSTITUTION WITH STRONGER INSTITUTION

CLOSE THE INSTITUTION; TRANSFER ENDOWMENT AND OTHER ASSETS TO RELATED PURPOSE

Source: "Redirecting Higher Education In a Time of Budget Reduction," James R. Mingle. Issues in Higher Education, no. 18, 1982.

completed the instrument. They were asked to indicate whether their institutions had engaged in any other of the listed activities since 1978-79. If Mingle was correct, there would be a hierarchy of responses with an underlying continuum based on the enrollment and revenue decline.

The problem of empirically testing this idea was approached using Guttman Scale analysis. The technique provides a means of analyzing a set of items to determine: 1) whether the responses of institutions were dependent on a single factor, in this case the severity of decline encountered, and 2) whether institutions could be ordered on the basis of their responses so that decline and nondecline institutions could be identified. If a set of items conforms to a valid Guttman scale, then 1) the less frequently an item occurs (i.e., receives a positive response) the greater its severity, 2) institutions that respond positively to more severe items will respond positively to less severe items, and 3) institutions' cumulative scores are indicative of the actions they have and have not taken.

The scalogram procedure works by 1) calculating a total score for each respondent on the items in the scale; 2) calculating the frequency of positive responses for each item; and, then 3) based on 1 and 2 above, determining the number of respondents that should have passed and failed each item. Derived marginals from this procedure are then used to estimate statistics that indicate the extent to which the items form a Guttman scale.

The statistical program used to carry out the analysis (SPSS) also provides item intercorrelations so that the investigator can further evaluate the fit of a single item to the other items in the

hypothesized scale. The major drawback of the program used was that it would evaluate no more than twelve items at once. We attempted to minimize this problem by analyzing the twelve most frequently occurring items on the first pass; the next eleven plus twelfth from the first pass on the second pass, and so on.

Since we were interested in determining whether decline and nondecline institutions could be identified on the basis of their responses, all the institutions reporting complete data for the supplemental questionnaire were included in the analysis. This selection criterion resulted in 251 institutions being included in the analysis.

The results of applying the scalogram analysis to the first twelve questionnaire items are shown in Table 1. Examples of the kinds of information provided by the scalogram program follow:

(1) The number of institutions responding affirmatively/passing ("1") and negatively/failing ("0") each item is printed at the bottom of the table along the row marked SUMS. For example, 96 institutions passed item Q7.

(2) The percent of institutions responding affirmatively/passing ("1") and negatively/failing ("0") each item is printed at the bottom of the table along the row marked PCTS. For example, 79% of the institutions passed item Q6.

(3) The program prints the term ERR above those responses which (based on their scale score) passed an item when they should have failed it, or failed an item when they should have passed. For example, two (2) institutions failed item Q8

Table 1

Scalogram Analysis for Cutback Items: Set 1

```
*********  GUTTMAN  SCALE  (SCALE1    )  USING  *********
Q7          REDUCE ENERGY COSTS                    DIVISION POINT =      1.00
Q3          POSTPONE EQUIP PURCHASES               DIVISION POINT =      1.00
Q1          RESTRICT TRAVEL ETC                    DIVISION POINT =      1.00
Q10         DEFER MAINT PROJS                      DIVISION POINT =      1.00
Q8          EMPLOY PT INSTEAD FT                   DIVISION POINT =      1.00
Q6          REDUCE STAFF THRU ATTR                 DIVISION POINT =      1.00
Q13         INCR TUIT&R&B BEYOND INFL              DIVISION POINT =      1.00
Q5          TIGHTEN TENURE REQS                    DIVISION POINT =      1.00
Q9          REDUCE SECRETARIAL STAFF               DIVISION POINT =      1.00
Q4          CUT LIBRARY BUDGET                     DIVISION POINT =      1.00
Q20         IMPOSE FAC HIRING FREEZE               DIVISION POINT =      1.00
Q12         REDUCE #COURSES                        DIVISION POINT =      1.00
**********  RESP = 1 FOR VALUES EQUAL TO DIVISION POINT AND ABOVE  **********

ITEM.. Q12      Q20      Q4       Q9       Q5       Q13      Q6       Q8       Q10      Q1       Q3       Q7
RESP.. 0  1 I 0  1 I 0  1 I 0  1 I 0  1 I 0  1 I 0  1 I 0  1 I 0  1 I 0  1 I 0  1 I 0  1 I
TOTAL
-----I-ERR-----I-ERR-----I-ERR-----I-ERR-----I-ERR-----I-ERR-----I-ERR-----I-ERR-----I-ERR-----I-ERR-----I-ERR-----I-ERR-----I
S    I          I        I        I        I        I        I        I        I        I        I        I        I        I
C 12 I  0  10I  0  10I  0  10I  0  10I  0  10I  0  10I  0  10I  0  10I  0  10I  0  10I  0  10I  0  10I  0  10I     10
A    I------ERRI        I        I        I        I        I        I        I        I        I        I        I        I
L    I          I        I        I        I        I        I        I        I        I        I        I        I        I
E 11 I  2  17I  4  15I  3  16I  0  19I  4  15I  2  17I  1  18I  2  17I  0  19I  0  19I  0  19I  1  18I     19
1    I        I------ERRI        I        I        I        I        I        I        I        I        I        I        I
     I          I        I        I        I        I        I        I        I        I        I        I        I        I
  10 I  19 13I  11 21I  6  26I  3  29I  9  23I  9  23I  1  31I  3  29I  2  30I  0  32I  0  32I  1  31I     32
     I          I        I------ERRI        I        I        I        I        I        I        I        I        I        I
     I          I        I        I        I        I        I        I        I        I        I        I        I        I
   9 I  14 12I  9  17I  7  19I  5  21I  11 15I  17 9I  2  24I  3  23I  4  22I  4  22I  2  24I  0  26I     26
     I          I        I        I------ERRI        I        I        I        I        I        I        I        I        I
     I          I        I        I        I        I        I        I        I        I        I        I        I        I
   8 I  18 16I  21 13I  14 20I  13 21I  16 18I  18 16I  12 22I  8  26I  5  29I  6  28I  4  30I  1  33I     34
     I          I        I        I        I------ERRI        I        I        I        I        I        I        I        I
     I          I        I        I        I        I        I        I        I        I        I        I        I        I
   7 I  23 11I  23 11I  22 12I  17 17I  20 14I  12 22I  9  25I  15 19I  13 21I  8  26I  6  28I  2  32I     34
     I          I        I        I        I        I------ERRI        I        I        I        I        I        I        I
     I          I        I        I        I        I        I        I        I        I        I        I        I        I
   6 I  20  7I  21  6I  20  7I  21  6I  16 11I  13 14I  12 15I  7  20I  14 13I  9  18I  7  20I  2  25I     27
     I          I        I        I        I        I        I------ERRI        I        I        I        I        I        I
     I          I        I        I        I        I        I        I        I        I        I        I        I        I
   5 I  17  3I  20  0I  17  3I  16  4I  10 10I  7  13I  14  6I  11  9I  11  9I  9  11I  7  13I  1  19I     20
     I          I        I        I        I        I        I        I------ERRI        I        I        I        I        I
     I          I        I        I        I        I        I        I        I        I        I        I        I        I
   4 I  15  3I  16  2I  16  2I  18  0I  12  6I  6  12I  11  7I  14  4I  10  8I  14  4I  10  8I  2  16I     18
     I          I        I        I        I        I        I        I        I------ERRI        I        I        I        I
     I          I        I        I        I        I        I        I        I        I        I        I        I        I
   3 I  15  1I  14  2I  13  3I  16  0I  10  6I  8  8I  15  1I  10  6I  13  3I  15  1I  11  5I  4  12I     16
     I          I        I        I        I        I        I        I        I        I------ERRI        I        I
```


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Table 1 continued

```
ITEM.. Q12       Q20       Q4        Q9        Q5        Q13       Q6        Q8        Q10       Q1        Q3        Q7
RESP.. 0   1 I 0   1 I 0   1 I 0   1 I 0   1 I 0   1 I 0   1 I 0   1 I 0   1 I 0   1 I 0   1 I 0   1 I 0   1 I
TOTAL
     I         I         I         I         I         I         I         I         I         I         I         I
   2 I 11    0I 11     0I 11     0I 11     0I  8    3I  5    6I 11     0I 10    1I  9    2I 11     0I 11     0I  1   10I 11
     I         I         I         I         I         I         I         I         I         I         I-------ERRI        I
     I         I         I         I         I         I         I         I         I         I         I         I         I
   1 I  4    0I  4     0I  4     0I  4     0I  3    1I  4     0I  4     0I  4     0I  4     0I  4     0I  4     0I  1    3I  4
     I         I         I         I         I         I         I         I         I         I         I         I-------ERRI
     I         I         I         I         I         I         I         I         I         I         I         I         I
   0 I  0    0I  0     0I  0     0I  0     0I  0     0I  0     0I  0     0I  0     0I  0     0I  0     0I  0     0I  0    0I  0
     I---------I---------I---------I---------I---------I---------I---------I---------I---------I---------I---------I---------I
SUMS   158   93  154   97  133  118  124  127  119  132  101  150   92  159   87  164   85  166   80  171   62  189   16  235  251
PCTS    63   37   61   39   53   47   49   51   47   53   40   60   37   63   35   65   34   66   32   68   25   75    6   94
ERRORS   0   93    4   72    9   66    8   48   40   51   58   53   37   14   49   11   59    5   65    0   58    0   16    0  306
```

269 CASES WERE PROCESSED
18 (OR 6.7 PCT) WERE MISSING

STATISTICS..

COEFFICIENT OF REPRODUCIBILITY = .7324
MINIMUM MARGINAL REPRODUCIBILITY = .6434
PERCENT IMPROVEMENT = .0890
COEFFICIENT OF SCALABILITY = .2495

YULE'S Q..

	Q7	Q3	Q1	Q10	Q8	Q6	Q13	Q5	Q9	Q4	Q20	Q12
Q7	1.0000	.3146	.3872	.3447	.0657	.1570	.3330	.5642	.4074	-.3243	-.1123	.1368
Q3	.3146	1.0000	.8582	.8158	.5786	.4656	-.2233	.0688	.4653	.7784	.5894	.5152
Q1	.3872	.8582	1.0000	.5898	.5407	.6959	-.0840	.1125	.7619	.6849	.6653	.2641
Q10	.3447	.8158	.5898	1.0000	.4171	.3876	.0661	.0250	.5855	.5941	.4753	.3631
Q8	.0657	.5786	.5407	.4171	1.0000	.4843	-.0003	.2004	.5249	.4071	.3917	.4576
Q6	.1570	.4656	.6959	.3876	.4843	1.0000	.1055	.1158	.9041	.4977	.7177	.3339
Q13	.3330	-.2233	-.0840	.0661	-.0003	.1055	1.0000	.0702	.1353	-.1816	-.2377	.0863
Q5	.5642	.0688	.1125	.0250	.2004	.1158	.0702	1.0000	.1966	.2509	.1673	.2404
Q9	.4074	.4653	.7619	.5855	.5249	.9041	.1353	.1966	1.0000	.6109	.6304	.5103
Q4	-.3243	.7784	.6849	.5941	.4071	.4977	-.1816	.2509	.6109	1.0000	.5644	.3407
Q20	-.1123	.5894	.6653	.4753	.3917	.7177	-.2377	.1673	.6304	.5644	1.0000	.3764
Q12	.1368	.5152	.2641	.3631	.4576	.3339	.0863	.2404	.5103	.3407	.3764	1.0000
BISERIAL CORR SCALE-ITEM	.1965	.6473	.6869	.5441	.4744	.6213	-.0138	.1784	.7218	.5406	.5066	.3929

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when they should have passed it; twelve institutions passed item Q20 when they should have failed it.

(4) An item-by-item accumulation of errors is printed across the bottom of the table alongside the heading ERRORS. The left value under each item gives the number of respondents who failed an item when they should have passed it, and the right value indicates the number of respondents who passed the item when they should have failed it. For example, three (3) institutions passed item Q8 when they should have failed it; twenty-two (22) failed it when they should have passed it.

The statistics reported in the box below the table indicate the extent to which the set of twelve items form a Guttman scale. They are derived from the marginal totals in the table.

The "coefficient of reproducibility" equals the percent of correct responses. That is, [1-(total number of errors/total number of responses)]. A general guideline to the interpretation of the coefficient is that a score of higher than .9 is considered to indicate a valid Guttman scale (Nie, et al., 1975). The coefficient for the twelve items shown in the box in Table 1 is .7558, about 15 percent lower than what is considered essential for evidence of a valid Guttman scale.

The other coefficients may be described as follows (Nie, et al., 1975:533):

> The "minimum marginal reproducibility" constitutes the minimum coefficient of reproducibility that could have occurred for the scale given the cutting points used and the proportion of respondents passing and failing each of the items. It is calculated by summing the maximum marginals for each item and dividing this sum by the total number of responses. The difference between the

> coefficient of reproducibility and the minimum marginal reproducibility indicates the extent to which the former is due to response patterns rather than the inherent cumulative interrelation of the variables used. This difference is called the "percent improvement" and is actually the difference in the two percents rather than a ratio itself... The final measure is obtained by dividing the percent improvement by the difference between 1 and the minimum marginal reproducibility. The denominator represents the largest value that the percent improvement may attain, and the resulting ratio is called the "coefficient of scalability." The coefficient of scalability also varies from 0 to 1, and should be well above .6 if the scale is truly unidimensional and cumulative.

Evaluation of the derived coefficients in Table 1 in terms of the descriptions and criterion cited above suggests that they do not form a valid Guttman scale. In other words, it appears very unlikely that 1) there is an underlying unidimensional continuum of severity; 2) if severity is determined-by or inversely-related-to frequency of occurrence, then institutions often took more severe actions before taking less severe actions; and, therefore 3) that particular actions taken by institutions are not indicative of other responses they have taken. These conclusions seem appropriate to all three of the analyses performed--the analyses for the remaining items are shown in Tables 2 and 3. Thus the results suggested by the scalogram analyses were contrary to what we expected, given the logic of Mingle's reasoning.

In order to better understand why the events lacked the hypothesized structure, an additional analysis was performed. This involved crosstabulating each of the first 25 events in the supplemental questionnaire against item Q23 ("Declare state of financial exigency"). Item Q23 was chosen because "declaring a state of financial exigency" is generally considered a severe response to declining enrollment and revenue. The results of this analysis are

Table 2

Scalogram Analysis for Cutback Items: Set 2

```
* * * * * * * * * *  G U T T M A N   S C A L E  ( S C A L E 2    )  U S I N G  * * * * * * * * * *
Q12          REDUCE #COURSES                          DIVISION POINT =      1.00
Q16          ENTER AGREEMTS WITH OTHERS               DIVISION POINT =      1.00
Q11          INCR FAC WKLOAD                          DIVISION POINT =      1.00
Q15          REDUCE #STU SERV PERSONS                 DIVISION POINT =      1.00
Q14          REQ LARGER TUIT DEPOSITS                 DIVISION POINT =      1.00
Q19          LEASE CONVERT CLOSE DORMS                DIVISION POINT =      1.00
Q18          BORROW MONEY                             DIVISION POINT =      1.00
Q2           LOWER ADM STANDARDS                      DIVISION POINT =      1.00
Q24          TERM TENURED FAC                         DIVISION POINT =      1.00
Q22          ELIM OFF CAMPUS TEACHING                 DIVISION POINT =      1.00
Q23          DECL STATE OF FIN EXIGENCY               DIVISION POINT =      1.00
Q21          ELIM OFF CAMPUS PGMS                     DIVISION POINT =      1.00
* * * * * * * * * * * *  RESP = 1 FOR VALUES EQUAL TO DIVISION POINT AND ABOVE  * * * * * * * * * * * *

ITEM.. Q21       Q23       Q22       Q2        Q24       Q18       Q14       Q19       Q15       Q11       Q16       Q12

RESP.. 0   1 I 0   1 I 0   1 I 0   1 I 0   1 I 0   1 I 0   1 I 0   1 I 0   1 I 0   1 I 0   1 I 0   1 I 0   1 I
TOTAL
-----I-ERR-----I-ERR-----I-ERR-----I-ERR-----I-ERR-----I-ERR-----I-ERR-----I-ERR-----I-ERR-----I-ERR-----I-ERR-----I-ERR-----I
S    I         I         I         I         I         I         I         I         I         I         I         I         I
C 12 I   0   0I   0   0I   0   0I   0   0I   0   0I   0   0I   0   0I   0   0I   0   0I   0   0I   0   0I   0   0I   0   0
A    I------ERRI         I         I         I         I         I         I         I         I         I         I         I
L    I         I         I         I         I         I         I         I         I         I         I         I         I
E 11 I   0   0I   0   0I   0   0I   0   0I   0   0I   0   0I   0   0I   0   0I   0   0I   0   0I   0   0I   0   0I   0   0
2    I         I------ERRI         I         I         I         I         I         I         I         I         I         I
     I         I         I         I         I         I         I         I         I         I         I         I         I
  10 I   0   0I   0   0I   0   0I   0   0I   0   0I   0   0I   0   0I   0   0I   0   0I   0   0I   0   0I   0   0I   0   0
     I         I         I------ERRI         I         I         I         I         I         I         I         I         I
     I         I         I         I         I         I         I         I         I         I         I         I         I
   9 I   0   0I   0   0I   0   0I   0   0I   0   0I   0   0I   0   0I   0   0I   0   0I   0   0I   0   0I   0   0I   0   0
     I         I         I------ERRI         I         I         I         I         I         I         I         I         I
     I         I         I         I         I         I         I         I         I         I         I         I         I
   8 I   2   0I   2   0I   2   0I   0   2I   0   2I   1   1I   1   1I   0   2I   0   2I   0   2I   0   2I   0   2I   2
     I         I         I         I------ERRI         I         I         I         I         I         I         I         I
     I         I         I         I         I         I         I         I         I         I         I         I         I
   7 I   4   0I   4   0I   3   1I   1   3I   3   1I   2   2I   1   3I   0   4I   0   4I   1   3I   1   3I   0   4I   4
     I         I         I         I         I         I------ERRI         I         I         I         I         I         I
     I         I         I         I         I         I         I         I         I         I         I         I         I
   6 I  11   5I   6  10I   8   8I  14   2I   6  10I  10   6I  11   5I   5  11I   5  11I   6  10I   8   8I   6  10I  16
     I         I         I         I         I         I------ERRI         I         I         I         I         I         I
     I         I         I         I         I         I         I         I         I         I         I         I         I
   5 I  13   1I  10   4I  12   2I  12   2I   7   7I   8   6I   9   5I   6   8I   7   7I   6   8I   5   9I   3  11I  14
     I         I         I         I         I         I         I         I------ERRI         I         I         I         I
     I         I         I         I         I         I         I         I         I         I         I         I         I
   4 I  21   6I  22   5I  22   5I  22   5I  24   3I  17  10I  18   9I  21   6I  15  12I  13  14I  12  15I   9  13I  27
     I         I         I         I         I         I         I         I         I------ERRI         I         I         I
     I         I         I         I         I         I         I         I         I         I         I         I         I
   3 I  35   3I  33   5I  32   6I  31   7I  34   4I  25  13I  22  16I  30   8I  28  10I  24  14I  24  14I  24  14I  38
     I         I         I         I         I         I         I         I         I------ERRI         I         I
```

Table 2 continued

```
ITEM.. Q21        Q23        Q22        Q2         Q24        Q18        Q14        Q19        Q15        Q11        Q16        Q12
RESP..  0   1 I  0   1 I  0   1 I  0   1 I  0   1 I  0   1 I  0   1 I  0   1 I  0   1 I  0   1 I  0   1 I  0   1 I
TOTAL
     I          I          I          I          I          I          I          I          I          I          I          I
   2 I 53   41 I 56   11 I 52   51 I 51   61 I 54   31 I 48   91 I 47  101 I 46  111 I 44  131 I 45  121 I 37  201 I 37  201 I 57
     I          I          I          I          I          I          I          I          I          I          I------ERRI          I
     I          I          I          I          I          I          I          I          I          I          I          I
   1 I 55   01 I 54   11 I 55   01 I 52   31 I 53   21 I 50   51 I 47   81 I 48   71 I 47   81 I 49   61 I 49   61 I 46   91 I 55
     I          I          I          I          I          I          I          I          I          I          I          I------ERRI
     I          I          I          I          I          I          I          I          I          I          I          I
   0 I 24   01 I 24   01 I 24   01 I 24   01 I 24   01 I 24   01 I 24   01 I 24   01 I 24   01 I 24   01 I 24   01 I 24   01 I 24
     I----------I----------I----------I----------I----------I----------I----------I----------I----------I----------I----------I
SUMS  218   19  211   26  210   27  207   30  205   32  185   52  180   57  180   57  170   67  168   69  160   77  149   88   237
PCTS   92    8   89   11   89   11   87   13   86   14   78   22   76   24   76   24   72   28   71   29   68   32   63   37
ERRORS  0   19    0   26    0   27    0   30    0   30    3   49   13   48   11   32   27   31   50   18   87    6  125    0   632

   269 CASES WERE PROCESSED
    32 (OR 11.9 PCT) WERE MISSING

STATISTICS..

COEFFICIENT OF REPRODUCIBILITY =  .7778
MINIMUM MARGINAL REPRODUCIBILITY =  .7887
PERCENT IMPROVEMENT = -.0109
COEFFICIENT OF SCALABILITY = -.0516

YULE'S Q..

          Q12      Q16      Q11      Q15      Q14      Q19      Q18      Q2       Q24      Q22      Q23      Q21
Q12     1.0000    .1382    .4175    .3776   -.1592    .3598    .0363    .1474    .5411    .1703    .5109   -.4031
Q16      .1382   1.0000    .2054    .3594    .4012    .1273    .0613    .1059    .0491   -.0750   -.1480    .3300
Q11      .4175    .2054   1.0000    .1226    .1820    .2802    .2687    .0244    .3592   -.2000    .5359    .0635
Q15      .3776    .3594    .1226   1.0000   -.0065    .3529   -.1058    .2964    .5024    .2245    .0676    .0859
Q14     -.1592    .4012    .1820   -.0065   1.0000   -.0454    .2755    .1734   -.1787    .0566   -.6176   -.0928
Q19      .3598    .1273    .2802    .3529   -.0454   1.0000    .1598    .0794    .6476    .0566    .5195   -.2743
Q18      .0363    .0613    .2687   -.1058    .2755    .1598   1.0000    .1479    .0990    .0092    .4310   -.2146
Q2       .1474    .1059    .0244    .2964    .1734    .0794    .1479   1.0000    .2702    .1034   -.0588   -.1121
Q24      .5411    .0491    .3592    .5024   -.1787    .6476    .0990    .2702   1.0000    .2127    .8199   -.1512
Q22      .1703   -.0750   -.2000    .2245    .0566    .0566    .0092    .1034    .2127   1.0000    .3433    .9803
Q23      .5109   -.1480    .5359    .0676   -.6176    .5195    .4310   -.0588    .8199    .3433   1.0000   -.0251
Q21     -.4031    .3300    .0635    .0859   -.0928   -.2743   -.2146   -.1121   -.1512    .9803   -.0251   1.0000

BISERIAL CORR
SCALE-ITEM  .2948    .2141    .3043    .2919    .0632    .3171    .1446    .1468    .4738    .2586    .3771    .1650
```


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Table 3

Scalogram Analysis for Cutback Items: Set 3

```
* * * * * * * * *  G U T T M A N   S C A L E  ( S C A L E 3     )  U S I N G
Q21        ELIM OFF CAMPUS PGMS                          DIVISION POINT =      1.00
Q17        ELIM GEN.FUND SUP OF ATHLETICS                DIVISION POINT =      1.00
Q25        MERGE INST WITH ANOTHER                       DIVISION POINT =      1.00
* * * * * * * * * * *  RESP = 1 FOR VALUES EQUAL TO DIVISION POINT AND ABOVE  * *
```

ITEM..	Q25		Q17		Q21		
RESP..	0	1	0	1	0	1	TOTAL
S		1		1		1	
C 3	0	0	0	0	0	0	0
A	-ERR-		-ERR-		-ERR-		
L		1		1		1	
E 2	1	1	1	1	0	2	2
3		-ERR-		-ERR-			
		1		1		1	
1	38	3	22	19	22	19	41
				-ERR-			
		1		1		1	
0	206	0	206	0	206	0	206
SUMS	245	4	229	20	228	21	249
PCTS	98	2	92	8	92	8	
ERRORS	0	4	1	19	22	0	46

269 CASES WERE PROCESSED
20 (OR 7.4 PCT) WERE MISSING

STATISTICS..

COEFFICIENT OF REPRODUCIBILITY = .9384
MINIMUM MARGINAL REPRODUCIBILITY = .9398
PERCENT IMPROVEMENT = -.0013
COEFFICIENT OF SCALABILITY = -.0222

YULE'S Q..

	Q21	Q17	Q25
Q21	1.0000	-.2903	.5789
Q17	-.2903	1.0000	-1.0000
Q25	.5789	-1.0000	1.0000

BISERIAL CORR			
SCALE-ITEM	-.0021	-.0864	.0894

reported in Table 4. The "twist" in the table is that the numbers reported in each cell represent the number of institutions that did/did-not declare financial exigency and also "did-not" report doing the event specified in each row. Thus, for example, the data in the first row indicate that two institutions that declared financial exigency did not "restrict travel, telephone, and supply purchases (Q1)--rather curious in view of the seriousness of the former event. The data in the table indicate that of the 16 institutions which declared financial exigency, several did not take actions that seem far less severe.

The results of this analysis seems to shed some light on why the scalogram analysis was unable to find an underlying dimension of severity on the first 25 items of the supplemental questionnaire, or, attribute some meaning to the number of events that institutions reported experiencing during the study period. The results of these analyses suggest the possibility that institutions may not have had the option to take seemingly less severe actions--either because they were already operating on the margin and/or because of unique institutional constraints.

FACTOR ANALYSIS

With the results of the scalogram analysis showing that there was a hierarchy of responses based on a continuum of the severity of enrollment or revenue decline, we decided to explore whether institutions might engage in selected "sets" of activities to cutback their operations. That is, institutions might focus on retrenching by cutting back in some areas of operation and not others. For example, an institution might cutback by reducing expenditures in the areas of

Table 4

Crosstabulation of Declaring a State of Financial Exigency with Other Cutback Items

Q	Events	Declared a State of Financial Exigency: "Did not" 0	"Did" 1	
1.	Restrict travel, telephone, and supply purchases	19 20.9	2 12.5	21 19.6
2.	Lower admissions standards	77 84.6	14 87.5	91 85.0
3.	Postpone planned equipment purchases	15 16.5	0 .0	15 14.0
4.	Cut library budget	34 37.4	6 37.5	40 37.4
5.	Tighten tenure requirements	42 46.2	6 37.5	48 44.9
6.	Reduce support staff through attrition	19 20.9	2 12.5	21 19.6
7.	Reduce energy costs through conservation	4 4.4	1 6.3	5 4.7
8.	Employ part-time in place of full-time faculty	26 28.6	3 18.8	29 27.1
9.	Reduce secretarial staff	30 33.0	2 12.5	32 29.9
10.	Defer maintenance and renovation projects	29 31.9	1 6.3	30 28.0
11.	Increase faculty workload	61 67.0	8 50.0	69 64.5
12.	Reduce number of course offerings	48 52.7	4 25.0	52 48.6
13.	Increase tuition, room, and board charges beyond inflation rate	46 50.5	4 25.0	50 46.7

Table 4 continued

Q	Events	Declared a State of Financial Exigency: "Did not" 0	"Did" 1	
14.	Require larger and/or earlier tuition deposits	71 78.0	14 87.5	85 79.4
15.	Reduce the number of student services personnel	51 56.0	10 62.5	61 57.0
16.	Enter contractual agreements with other agencies to reduce costs	58 63.7	9 56.3	67 62.6
17.	Eliminate general fund support of intercollegiate athletics	80 87.9	13 81.3	93 86.9
18.	Borrow money to cover operating shortfalls	68 74.7	9 56.3	77 72.0
19.	Lease, convert, or close dorm space	67 73.6	8 50.0	75 70.1
20.	Impose a hiring freeze on faculty positions	48 52.7	5 31.3	53 49.5
21.	Eliminate off-campus programs	76 83.5	14 87.5	90 84.1
22.	Eliminate off-campus teaching sites	73 80.2	14 87.5	87 81.3
23.	Declare a state of financial exigency	91 100.0	0 .0	91 85.0
24.	Terminate tenured faculty	80 87.9	8 50.0	88 82.2
25.	Merge institution with another institution	89 97.8	16 100.0	105 98.1
		91 85.0	16 15.0	107 100.0

support staff or by curtailing maintenance, and not by reducing faculty or course offerings. If this were the case, it would explain the lack of a hierarchy of responses.

To investigate this possibility, we selected a sample of institutions from those participating in the 1983 survey that were shown to have experienced declining revenues or enrollments sometime between 1978-79 and 1982-83. Institutions were included in this subsample if one or more of the following conditions were met: 1) All the respondents from an institution agreed that enrollments or revenues had decreased sometime during the period between 1978-79 and 1982-83, or 2) Analysis of HEGIS enrollment and financial data showed that institutional enrollments or revenues had decreased by more than five percent between 1978-79 and 1980-81. Of the institutions completing the supplemental questionnaire, 91 institutions satisfied at least one of these selection criteria and had complete data for the cutback-related items (items 1-25) contained in the questionnaire.

The problem of determining whether there were cutback activities that had a high correspondence or correlation with one another was approached by employing factor analysis. For the 91 institutions included in the analysis of cutback-related items, the initial factor decomposition produced ten factors with eigenvalues greater than 1.0. Ten factors were subsequently extracted from a correlation matrix using squarred multiple correlations as estimates of communalities. These factors accounted for approximately 45 percent of the variance in the system. The results of the varimax rotated solution are shown in Table 5.

Table 5

Factor Analysis of Cutback Items:
Varimax Rotated Factor Matrix

	FACTOR 1	FACTOR 2	FACTOR 3	FACTOR 4	FACTOR 5	FACTOR 6	FACTOR 7	FACTOR 8	FACTOR 9	FACTOR 10
Q1	.37174	.15359	.03103	.34301	.10793	-.13713	.35162	.04129	-.25019	.28409
Q2	.03258	.07058	.05813	.02745	-.00350	.00074	-.45111	-.00571	.01591	-.01707
Q3	.18558	.16195	.21357	.24072	.12487	-.05543	.53610	-.10549	.11113	-.21621
Q4	.28958	.11550	.00244	.69928	.10887	-.05327	.07661	-.01741	.00453	-.04551
Q5	.03399	.05793	.02783	-.00627	.15916	-.00973	.02133	-.09531	-.49015	.03919
Q6	.66705	.10873	.12164	-.01396	.05191	-.04743	.09871	.04370	.01751	.02613
Q7	-.03430	.04957	.04324	-.03702	.06296	-.02937	.03449	.01061	.00519	-.28110
Q8	.13640	-.02409	.13894	.22635	.11481	-.14202	.02218	-.01343	.16892	.05236
Q9	.64878	-.13975	.13749	.23843	.12031	.15809	-.10100	.13022	.02588	.06194
Q10	.32425	-.04637	.30261	.27239	-.03264	.30732	.35556	-.10337	.29826	-.28998
Q11	.02142	-.18415	.05836	.06951	.37863	-.18533	.07584	.09140	.55089	.13338
Q12	.12388	-.09993	.26759	.13360	.56920	-.10373	-.03752	-.11568	-.10467	-.15112
Q13	-.00591	-.07177	-.00349	-.00235	.06042	.71271	-.02393	.00780	-.06755	.09062
Q14	.06689	-.00031	-.10516	-.07734	.04781	.20077	-.18065	.54113	.03022	-.08103
Q15	.56964	-.03373	.25156	.04275	.04084	-.01265	-.05421	.19212	-.11430	-.20072
Q16	.27091	.04452	.02314	-.00935	.27337	-.10708	-.22205	.31246	-.03640	.12654
Q17	.13206	-.02765	-.04122	.08594	.53954	.24451	.10164	.04207	-.01629	-.04842
Q18	-.26095	-.14895	-.02025	.48648	.05186	.25361	-.02349	.00314	.03892	.22600
Q19	.09687	-.07913	.52942	.08570	.05013	-.01004	.09954	.16294	-.05547	-.01924
Q20	.55713	.17201	-.14948	.07860	.16195	-.04121	.08394	-.19339	.06860	.23835
Q21	.06018	.87865	-.04714	.05223	-.07886	-.06400	-.04863	.04841	-.06813	-.00619
Q22	.04333	.83848	-.09237	-.02603	-.02998	-.03409	-.00323	-.06686	-.11473	-.09520
Q23	.03576	.05750	.51128	-.02441	.22186	.22350	.11204	-.22509	.21207	.45731
Q24	.13309	-.06423	.75975	-.05373	.02445	-.04914	-.14843	-.12752	.03950	-.12106
Q25	.03328	-.02305	.07611	.04689	-.08196	-.12303	.13506	.52607	.14614	-.00562

A review of the results shown in Table 5 suggests that meaningful interpretation could only be tied to the first three factors. Assuming a .5 or greater loading for a cut-off value, the variables that define factor 1 include (factor loadings are shown in parentheses):

(1) Q6: Reduce staff support through attrition (.67).

(2) Q9: Reduce secretarial support (.65).

(3) Q15: Reduce number of student services personnel (.57).

(4) Q20: Impose a hiring freeze on faculty positions (.56).

This factor might be labelled "personnel reduction." Within the context of this study, it suggests that when institutions experiencing decline reduce personnel in one area of operations, they also are likely to reduce the number of personnel in other areas.

The second factor was defined by only two variables:

(1) Q21: Eliminate off-campus programs (.88).

(2) Q22: Eliminate off-campus teaching sites (.84).

This factor might be labeled "off-campus programs."

The third factor was defined by three variables:

(1) Q19: Lease, convert, or close dorm space (.53).

(2) Q23: Declare state of financial exigency (.51).

(3) Q24: Terminate tenured faculty (.76).

This factor might be labeled "major reductions."

While several of the remaining variables have loadings of .5 or larger on the remaining factors, they are not given to straightforward interpretation. The simplest interpretation of this condition is that the remaining variables occurred in a relatively asynchronous manner. That is, they occurred as isolated events, rather than in combination with other activities. This thesis receives further support from the

results of the scalogram analyses, which indicated that no hierarchy of cutback responses exists.

The same type of analysis was performed for items 26 through 35, which reflected more proactive responses an institution might take in attempting to reposition itself in the educational market place. A total of 103 institutions met the criteria for inclusion and had complete data on these items. Initial factor decomposition produced three factors with eigenvalues greater than 1.0. These factors accounted for about 30% of the variance in the system. The results of the varimax rotated solution are shown in Table 6.

A review of the results shown in Table 6 shows that only the first factor can be meaningfully interpreted. Again, using a .5 factor loading cut-off value, the four variables that define the factor are:

(1) Q26: Establish new off-campus teaching sites (.50).

(2) Q33: Develop or increase courses for part-time students (.53).

(3) Q34: Develop or increase the number of adult leisure courses (.64).

(4) Q35: Develop or increase the number of continuing education courses (.74).

This factor might be labeled "non-traditional education." The remaining variables appear to share neither common characteristics nor common occurrence.

Overall, the results of the analysis show there are some groupings of related activities that institutions employ in adjusting to decreasing enrollments and/or revenues. But, while some sets of activities emerged from the analysis, the absence of other sets of

Table 6

Factor Analysis of Proactive Items:
Varimax Rotated Factor Matrix

	Factor 1	Factor 2	Factor 3
Q26	.46909	.12850	.13791
Q27	.32150	.46627	.41867
Q28	.11905	.26943	.50451
Q29	.31546	.52000	-.03197
Q30	.26278	-.03671	.02304
Q31	-.00133	.39339	.02231
Q32	-.06572	.28245	-.49080
Q33	.52541	.20195	.25667
Q34	.63514	.15752	.00437
Q35	.73736	.14045	.13496

activities was surprising. For example, no set of activities formed around a "faculty adjustment" factor, which might have included such items as: increase faculty workload, impose a hiring freeze on faculty positions, employ part-time in place of full-time faculty, or tighten tenure requirements. In short, the analysis indicates that there is some ordering in institutional responses to cutback, but less than was initially expected.

CORRELATION ANALYSIS

Given the relative paucity of results from the scalogram and factor analyses, we decided that a shift in the focus of the research question was in order, from one of "how do institutions respond to decline" to one of "are there differences between decline and nondecline institutions?" This facet of the research is best described by a combination of two metaphors. The first is that of a hunter using a shotgun in the hope that when fired it will hit something. The other is that of a fisherman, trawling with a large net hoping to catch something. Thus we assigned schools to groups of decline and nondecline institutions and then sought to statistically determine through correlation analysis if and where the groups differed on selected perceptual and objective items from the questionnaire study.

The first task that had to be carried out was the development of decline and nondecline groups. As previously noted, setting criteria for inclusion in the study groups is largely an arbitrary matter. We approached this problem by creating four grouping variables: two based on respondents perceptions about enrollment and revenue conditions at their institution between 1978-79 and 1982-83; and, two based on

percent-change in enrollments and revenues based on HEGIS data between 1978-79 and 1980-81.

The perceptual enrollment variable was created by assigning institutions a score of 1.0 if all respondents in a school indicated that enrollment declined in at least one year between 1978-79 and 1982-83 (Appendix 1, Section 2, Item 2). Institutions received a score of 0.0 if there was 100% agreement that enrollments did not decline. When agreement among an institution's respondents was less than 100 percent, data for the institution were treated as missing. The perceptual revenue variable was created in the same manner (Section 3, Item 2).

The HEGIS-based enrollment variable was created by assigning institutions a score of 1.0 if enrollments decreased by 6 percent or more between 1978-79 and 1980-81. Schools received a score of 0.0, if their enrollments increased by 6 percent or more. Schools not falling in either category were treated as missing. The HEGIS-based revenue variable was created by assigning schools a score of 1.0 if there constant dollar revenues decreased by more than 6 percent, and a score of 0.0 if they increased by more than 6 percent for the same period.

Crosstabulation of the perceptual and HEGIS-based enrollment variables (Table 7) indicates relatively little overlap between the two procedures. Subtracting out non-agreement and non-change schools (n=94), we find 48 cases in the remaining 240, or 20 percent, that are similarly classified by both procedures. The comparable number for the revenue variables in Table 8 is less than 12 percent. The relatively small degree of overlap is not, of necessity, bad. Some disagreement must be expected as a function of the differences in the time period

Table 7

Crosstabulation of Perceptual and HEGIS Enrollment Variables

Perceptual Enrollment Variable	HEGIS-based Enrollment Variable: -5 to 5% Change	>-5% Decrease	>5% Increase	
Non 100% Agreement	94	36	80	210
100% Agreement Nondecline	25	2	30	57
100% Agreement Decline	39	18	10	67
	158	56	120	334

Table 8

Crosstabulation of Perceptual and HEGIS Revenue Variables

Perceptual Revenue Variable	HEGIS-based Revenue Variable: -5 to 5% Change	>-5% Decrease	>5% Increase	
Non 100% Agreement	113	37	126	276
100% Agreement Nondecline	13	0	18	31
100% Agreement Decline	17	8	2	27
	143	45	146	334

covered by the two sets of variables. The perceptual variables, 1978-79 to 1982-83; the HEGIS-based variables, 1978-79 to 1980-81. At minimum, the low level of agreement and general differences between classified cases demonstrates the relative arbitrariness of any operationalization of the concept of decline.

A second, but nonetheless, equally important issue concerns the level of disagreement within schools regarding enrollment and revenue related events. The data in Tables 7 and 8 indicate that respondents in 60 percent to 80 percent of the schools studied disagreed about what occurred in their schools during the five year study period. At minimum, this suggests that individuals in a majority of the schools in this study were poorly informed about enrollment and revenue conditions at their own institutions. The effects of this problem will be investigated in future work.

In order to determine whether there were significant differences between decline and nondecline groups each of the grouping variables was correlated with each of the relevant questionnaire and objective data items. Institution questionnaire scores were taken as the mean of respondents scores at that institution. The nature and significance of a derived correlation in this instance--that is, where one variable is dichotomous and the other continuous--is mathematically equivalent to the nature and significance associated with a T-test for group differences.

The major drawbacks of this approach are that 1) it capitalizes on chance differences between groups; 2) it fails to incorporate intercorrelations between items into associated probability estimates; and, 3) because of problems one and two above, the "type I error"

associated with each statistical test is many times greater than suggested by the results of utilizing a packaged statistical program. On the positive side, if one simply views the results as exploratory and only suggestive, rather than definitive in a hypothesis-testing sense, they can provide insight into differences between decline and nondecline schools in the sample studied.

Statistically significant ($p \leq .05$) correlations--which, as previously noted, are equivalent to significant T-tests for group differences--between the grouping variables and the first 25 objective data items are indicated by x's in Table 9. These items might be regarded as defensive or retrenchment oriented actions that institutions initiated in order to exist under declining enrollment and revenue conditions. Correlations for items 26 through 35, which are primarily proactive or repositioning oriented are also shown in Table 9.

Two points are pertinent to the interpretation of the results in Table 9. First, non-significant items are, in many ways, just as informative as significant ones. That is, they identify areas in which decline and nondecline institutions do not differ even though they have had very different enrollment and revenue experiences. Second, inspection of the signs of significant correlation coefficients indicates that they are all in the "correct" direction. That is, the sign on these coefficients indicate that schools in the decline group were always more likely to have taken defensive actions than those in the nondecline group. The following discussion will take the relatively conservative position of only discussing variables that were identified as significant (or nonsignificant) by both the perceptual

Table 9

Correlational Analysis: Cutback in Proactive Items
by Decline/Nondecline Groups

Question	Perceptual enrollment	Perceptual revenue	HEGIS enrollment	HEGIS revenue
1	x	x		x
2	x		x	
3		x		
4	x	x	x	x
5				
6	x	x	x	x
7				
8		x		x
9	x	x	x	x
10	x	x		x
11				
12	x	x	x	x
13		x		x
14	x		x	
15	x	x		x
16		x		
17				
18	x			

Question	Perceptual enrollment	Perceptual revenue	HEGIS enrollment	HEGIS revenue
19	x	x		
20		x		x
21				
22				x
23	x	x		
24	x	x		
25				
26				
27				
28				
29				
30				
31				
32	x			
33				x
34				
35				x

and HEGIS-based enrollment or revenue variables. The interested reader will find the results of all tests in Table 9.

The data in Table 9 indicate that institutions experiencing enrollment decline were more likely than nondecline institutions to:

(1) Lower admissions standards [item 2].

(2) Cut library budget [item 4].

(3) Reduce support staff through attrition [item 6].

(4) Reduce secretarial staff [item 9].

(5) Reduce number of course offerings [item 12].

(6) Require larger and/or earlier tuition deposits [item 14].

Similarly, institutions falling into the revenue decline category were more likely than nondecline institutions to:

(1) Restrict travel, telephone, and supply purchases [item 1].

(2) Cut library budget [item 4].

(3) Reduce support staff through attrition [item 6].

(4) Employ part-time in place of full-time faculty [item 8].

(5) Reduce secretarial staff [item 9].

(6) Defer maintenance and renovation projects [item 10].

(7) Reduce number of course offerings [item 12].

(8) Increase tuition, room, and board charges beyond inflation rate beyond inflation rate [item 13].

(9) Reduce the number of student services personnel [item 15].

(10) Impose a hiring freeze on faculty positions [item 20].

Perhaps, the most interesting results of the study concern the general lack of statistically significant differences between the decline and non-decline study groups with respect to the proactive

items (Table 9, items 26-35). These results suggest that it is not for lack of action that decline schools are in the situation they are in.

Items which failed to generate significant differences on any of the grouping variables include:

(1) Tighten tenure requirements [item 5]--cited by approximately half the institutions in each group.

(2) Reduce energy costs through conservation [item 7]--cited by almost all institutions in each group.

(3) Increase faculty workload [item 11]--cited by approximately half the institutions in each group.

(4) Eliminate general fund support of intercollegiate athletics [item 17]--cited by very few institutions in each group.

(5) Eliminate off-campus programs [item 21]--cited by very few institutions in each group.

The results of the tests for group differences on the questionnaire items are shown in Table 10. Again, the following discussion will take the relatively conservative approach of discussing those items that were identified as significant (nonsignificant) by both the perceptual and HEGIS-based enrollment or revenue variables. The results of the tests indicate that respondents in schools that fell into both enrollment decline categories were more likely to agree (disagree) with the statement that:

(1) Agree: Competitive actions of other colleges and universities now affect this institution in more areas (e.g., price, programs, area served) than in the past [Section 1, #5].

Table 10

Correlational Analysis: Perceptual Items
by Decline/Nondecline Groups

	Perceptual enrollment	Perceptual revenue	HEGIS enrollment	HEGIS revenue
Section 1				
1			x	
2			x	
3			x	
4				
5	x		x	
6	x		x	
7	x	x		
8		x		x
Section 4				
1				
2		x	x	
3		x		
4		x		
5				
6		x		
7	x	x	x	x
8		x	x	
9				
10		x		
11				
12		x		
13		x	x	
14				
15		x		

	Perceptual enrollment	Perceptual revenue	HEGIS enrollment	HEGIS revenue
Section 4				
16		x		x
17		x		
18	x	x	x	
19				
20		x		
21	x	x		
22				
Section 6				
1				
2		x		
3				
4				
5	x			
6	x			
7	x			x
8	x	x	x	
9	x			
10		x		
11	x	x		
12		x		
13	x	x		
14				

Table 10 continued

Section 7	Perceptual enrollment	Perceptual revenue	HEGIS enrollment	HEGIS revenue
1	x			
2				
3		x		
4				
5				
6				
7	x	x		
8				
9		x		
10		x		
11				
12	x		x	

Section 8	Perceptual enrollment	Perceptual revenue	HEGIS enrollment	HEGIS revenue
1	x			
2				
3	x	x		x
4	x	x		x
5	x			
6	x			
7	x			
8	x			
9				
10	x			
11				
12		x	x	x
13		x		x
14		x	x	

Section 8	Perceptual enrollment	Perceptual revenue	HEGIS enrollment	HEGIS revenue
15				
16				
17		x		
18			x	
19				
20		x		
21		x		
22	x			
23		x	x	
24	x	x	x	x
25	x	x	x	
26			x	
27		x		
28	x	x	x	x
29		x	x	x
30		x		
31				
32				

(2) Agree: Competition with other colleges and universities for student enrollments has increased over the past few years [Section 1, #6].

(3) Disagree: Those who make a personal or financial investment in this institution believe that they receive an ample return [Section 4, #7].

(4) Disagree: Top administrators have high credibility [Section 4, #18].

(5) Disagree: This institution tends to do more of what it does well, to expand in areas we have expertise [Section 6, #8].

(6) Disagree: Persuasion, negotiation, and coalition-building are examples of what determines resource allocation [Section 7, #12].

Respondents in enrollment decline schools also rated their institution significantly lower on items 24, 25, and 28 in Section 8:

(7) Item 24: How many faculty members at this college are actively engaged now in professional development activities--e.g., doing research, getting an advanced degree, consulting, etc.?

(8) Item 25: Colleges may be rated on the basis of their relative "drawing power" in attracting top high school students. In relation to other colleges with which it competes, what proportion of the top students attend this institution rather than the competition?

(9) Item 28: Organizational health of the college.

The results of the tests indicate that respondents in schools that fell into both revenue decline categories were more likely to agree (disagree) with the statement that:

(1) Disagree: Those who make a personal or financial investment in this institution believe they receive ample return [Section 4, #7].

(2) Agree: We have no place that we could cut expenditures without severely damaging the school [Section 4, #16].

(3) Disagree: This college has a very high ability to obtain financial resources in order to provide a high quality educational program [Section 8, #3].

(4) Disagree: When hiring new faculty members, this college can attract the leading people in the country in their respective fields to take a job here [Section 8, #4] [Section 7, #12].

Respondents in revenue decline schools also rated their institution significantly lower on items 24, 25, and 28 in Section 8:

(5) Item 24: How many faculty members at this college are actively engaged now in professional development activities--e.g., doing research, getting an advanced degree, consulting, etc.?

(6) Item 25: Colleges may be rated on the basis of their relative "drawing power" in attracting top high school students. In relation to other colleges with which it competes, what proportion of the top students attend this institution rather than the competition.

(7) Item 28: Organizational health of the college.

Items which failed to generate significant differences on any of the grouping variables follow. The groups generally differed from one-another on these items by less than .1. Hence, the grand mean (i.e., the mean pooled over groups) for each item is reported in parentheses. The scores are based on a five point scale, where a score of "1" stands for "strongly disagree," and a score of "5" for strongly agree.

(1) The tastes and preferences of students have become harder to forecast over the past few years (2.7) [Section 1, #4].

(2) This institution has many administrators performing specialized functions (3.3) [Section 4, #1].

(3) The academic programs offered here reflect the mission of the institution (4.0) [Section 4, #5].

(4) Major decisions are very centralized (3.5) [Section 4, #9].

(5) Innovative activity is increasing (3.6) [Section 4, #11].

(6) There is a great deal of turnover in administrative positions (2.4) [Section 4, #14].

(7) When cutbacks occur, they are done on a prioritized basis (3.4) [Section 4, #19].

(8) Top administrative positions are now held by individuals who were promoted from within the institution (2.9) [Section 4, #22].

(9) We are making our academic programs more diverse (3.5) [Section 6, #1].

(10) We are increasing the investment of the college in functions that deal with external people (admissions, development, government relations, and others) (3.7) [Section 6, #3].

(11) This institution tries to insulate itself from pressures in the environment (2.5) [Section 6, #4].

(12) The top administrative team provides incentives for conserving resources (3.0) [Section 6, #14].

(13) One individual at this institution makes all resource allocation decisions of any consequence (2.5) [Section 7, #2].

(14) A rational process is used to make resource allocation decisions at this institution (3.5) [Section 7, #4].

(15) No particular pattern characterizes the process by which resource allocation decisions are made here (2.5) [Section 7, #5].

(16) Resource allocation decisions are political, based on the relative power of those involved (2.7) [Section 7, #6].

(17) Resource allocation is decidedly autocratic (2.6) [Section 7, #8].

(18) Resource allocation is decided by coincidence; it is a matter of organized anarchy (2.0) [Section 7, #11].

(19) This college is highly responsive and adaptive to meeting the changing needs of its external constituencies (3.4) [Section 8, #2].

(20) There is a very high emphasis on institution-community or institution-environment activities (3.2) [Section 8, #9].

(21) A very large number of community-oriented programs, workshops, projects or activities were sponsored by the institution last year (3.2) [Section 8, #11].

The following items were converted to a five-point scale, where a score of "1" equals "none," and a score of "5" equals "all."

(22) What proportion of the students who graduated from this institution last year and entered the labor market obtained employment in their major field of study (3.4) [Section 8, #15].

(23) How many students would you say attend this college to fulfill definite career or occupational goals as opposed to attending for social, athletic, financial, or other reasons (3.7) [Section 8, #16].

(24) If given the chance of taking a similar job at another school of his or her choice, how many administrators do you think would opt for leaving this school (2.6) [Section 8, #19].

The following items were converted to a five-point scale, where a score of "1" suggests "very low," and a score of "5," "very high."

(25) Recognition and rewards received for good work from superiors (3.5) [Section 8, #31].

(26) The amount of information or feedback you receive (3.6) [Section 8, #32].

The results of the correlation analysis indicate that there are a number of differences in perceptions of institutional behavior in decline and nondecline institutions. With regard to the cutback items from the supplemental questionnaire, it appears that institutions experiencing decline engage in more cutback activities than do institutions not experiencing decline. Coupled with the scalogram and factor analyses, the results indicate that there are significant differences in the actions selected by decline and nondecline

institutions, but also that there is no hierarchy of cutback responses. This reinforces the earlier suggestion that the cutback activities selected by institutions in response to declining enrollments and revenues are largely asynchronous, and that the selection of specific cutback actions is largely dependent on the peculiar factors constraining an institution's options.

The findings for the perceptual items also indicate that significant differences exist between decline and nondecline institutions in terms of the perceived hostility of the environment, satisfaction of internal and external constituencies with the institution, credibility of top institutional leadership, adequacy of slack resources, and the ability of the institution to compete with other institutions for faculty and students. The nonsignificant items are revealing in that they reflect traditional measures of internal organizational form and function. No significant differences were found between decline and nondecline institutions in perceptions of environmental predictability, specialization, centralization, innovation, turnover, diversification, rewards and feedback, or in resource allocation decision styles.

Many of the items for which significant differences were found have to do with perceptions of an institution's environment and its position within it, and with the credibility of institutional leadership to and the satisfaction of organizational constituencies. These findings are consistent with the earlier work of the Organizational Studies Division, particularly that of Zammuto and Cameron (in press) and Chaffee (1982; in press). Zammuto and Cameron have developed a model of environmental conditions that create

different conditions of decline each of which call for different types of organizational responses. Chaffee's work has focused on the role of interpretive strategy in satisfying constituents and enhancing leadership credibility. While the exploratory analyses were not designed to examine the data within the context of these two conceptual frameworks, the results indicate that future analyses along the lines suggested by them will prove fruitful.

CUTBACK MANAGEMENT AND RESOURCE REALLOCATION

The final exploratory analysis examines the extent to which institutional factors affect the process of resource reallocation in colleges and universities that have experienced declining revenues. Resource reallocation under conditions of decline has been cited in the administrative community as being an important issue. For example, the National Commission on Higher Education Issues (1982: 1) concluded from their study of institutional priorities and administrative leadership that "the greatest danger to quality in higher education in the 1980s is "cuts-across-the-board." Moreover, if regularities in the reallocation process can be identified and better understood, it should be possible to determine what factors account for the differences in perceptions of individuals at decline and nondecline institutions.

This particular analysis differs from the three preceeding ones in a number of ways. First, it uses HEGIS financial data rather than data from the 1983 questionnaire study. Second, the sample is selected from the HEGIS universe of approximately 3,000 institutions as opposed to the survey sample of 336 institutions. Third, the analyses uses a set of hypotheses about resource reallocation developed from existing literature rather than exploring the characteristics of the data

collected in the survey study. Fourth, the analysis focuses on determining whether there are structural regularities in the system that account for differences in the reallocation process rather than examining differences in behavior or perception. The following section discusses the underlying rationale for the National Commission on Higher Education issues concern by examining the impact of across-the-board cuts on institutional functioning.

Across-the-board Cuts

A number of authors, such as Jick and Murray (1982) and Behn (1980), have noted that many organizations, both within and outside of higher education, employ across-the-board cuts as a response to declining revenues. The public administration and organization theory literatures have examined both the reasons for this practice and the dangers associated with it. Briefly, administrators tend to employ across-the-board cuts for two reasons. First, across-the-board cuts promote an aura of equality; everyone shares equally in the problems of the organization (Levine, 1978; Whetten, 1981). Such appeals for equally sharing the burden of reduced revenues helps avoid the political infighting and conflict associated with the reallocation of scarce resources. Second, across-the-board cuts are passive or delaying responses to decreasing revenues that require little exercise of administrative discretion (Jick and Murray, 1982; Murray, Jick, and Bradshaw, 1983). They enable administrators to avoid the reality of scarce resources and the hard choices required to retrench (Combs, 1982). In short, across-the-board cuts are a common response to declining revenues because they are administratively easier to make

than is the process of deciding how and where to make selective cuts in organizational operations.

Although across-the-board cuts are common and reduce the pain of administrative decision making, they do have a number of drawbacks. While appearing to be equitable, across-the-board cuts penalize an organization's most efficient units, a phenomenon that Levine (1979) has called the "efficiency paradox." Efficient units have fewer slack resources than less efficient units with which to absorb budgetary cuts. As a result, across-the-board cuts often have two unintended consequences. First, administrators have no incentive to conserve resources and operate efficiently in this situation, something that becomes self-defeating during a period of decreasing revenues. Second, the production of the organization can decrease disproportionately more than the extent to which cuts were made. To paraphrase Behn (1980), cutting back any unit beyond a certain point--beyond the point where organizational slack can be used to absorb cuts without reducing output--will reduce production by more than the percentage of the cut.

By default, administrators give up control of the retrenchment process in using across-the-board cuts. And when administrative control is lost, an institution can enter into a "self-reenforcing, downward spiral of declining resources and capabilities: An initial decrease in resources forces a first round of programmatic cutbacks; these, in turn, discourage the organization's most talented and productive members who, also being the most mobile, leave; this hurts the organization's productivity and makes it more difficult for the organization to attract resources; the subsequent decrease forces a second round of cutbacks (Behn, 1980: 617)," and so the downward spiral

continues. Unless administrators can break out of the spiral of decline, organizational demise becomes a real possibility (Cyert, 1978; Bozeman and Slusher, 1979).

While much is known about the dangers of across-the-board cuts, little information is available on how common the practice is in higher education, or about the factors that affect administrative decisions concerning cutback management. This analysis attempts to provide such information by examining the reallocation of resources in colleges and universities under conditions of declining revenues. Reallocation can be defined as ranging between two extremes: from no reallocation, where the proportionate distribution of resources across organizational units or areas of operation remain constant as revenues decrease (i.e., across-the-board cuts), to total reallocation, where all the remaining resources of the organization are redirected to a single unit or area of operation. The analysis examines the effects of the severity of revenue decline, the duration of a decline episode, an institution's recent revenue history, and institutional control on the reallocation of institutional resources. The expected effects and their rationale are presented in the following four hypotheses.

Hypotheses

1. The extent to which reallocation occurs is positively related to the severity of declining revenues.

This rather straightforward proposition is based on the premise that the greater the magnitude of revenue decline, the greater the threat to institutional survival. When institutional survival is threatened, administrators often have little choice but to undertake

drastic action. Moreover, the reality of declining revenues is immediate and unavoidable, and resistance to change within the organization is reduced. As a result, administrators are more likely to take corrective actions and reallocate resources so as to enhance an institution's chances for survival. Therefore, it is expected that there is less of a propensity to use across-the-board cuts, and a greater propensity to make selective cuts and reallocate resources as the severity of revenue decline increases.

2. The duration of a decline episode over time will be inversely related to the extent to which institutions reallocate resources.

Jick and Murray (1982) have suggested that organizations adopt more passive responses to decline over time as the length of a decline episode increases. Given that across-the-board cuts are a passive response to declining revenues, the expectation is that institutions will rely on them more with the passage of time. Murray, Jick, and Bradshaw (1983) have empirically demonstrated this effect in a study of the responses of six hospitals to declining revenues over a five year period. They found that these institutions initially responded to decreased revenues by increasing efficiency and reallocating resources. But as the duration of the decline episode increased, the emphasis on reallocation gave way to delaying actions such as across-the-board cuts.

3. Institutions that have experienced declining revenues in the past are more likely to engage in reallocation than are institutions with no recent history of revenue decline.

This proposition is based on the premise that a recent history of declining revenues will sensitize an institution to the need for reallocation, and make administrators more adept at handling the political battles that accompany it. Therefore, a positive relationship is expected between a recent history of revenue decline and the extent to which resources are reallocated.

4. Private institutions will have a greater propensity to engage in reallocation than will public institutions.

Behn (1980), Jick and Murray (1982), and Murray, et al. (1983) suggest that institutions will engage in delaying actions, such as across-the-board cuts, if they believe that an external agency is likely to provide additional resources in an emergency situation. Public institutions have state legislatures and coordinating agencies that can act as courts of last resort. Private institutions, with the exception of a small number of schools with religious affiliations, are less likely to be able to call upon an outside agency to make up revenue shortfalls. Moreover, administrators in public institutions appear to have less budgetary discretion than their counterparts in private institutions, which hinders their ability to reallocate resources. Therefore, it is expected that private institutions are more likely to reallocate resources than are public institutions.

Methodology

Data Base and Sample

Data for this analysis were obtained from the Higher Education General Information Survey (HEGIS) finance questionnaires for the

period between 1973-74 and 1980-81. The sample included all institutions in the HEGIS universe that experienced declining revenues from one to the next in any of the years between 1975-76 and 1980-81.

Variables

The reallocation variable to be used in this study was developed by Ludwig (1983). It is defined as the percentage of constant dollar expenditures across functional areas in time t+1 which would differ from what would be expected given a pure, across-the-board cutback. Notationally, the reallocation variable is expressed as follows:

$$R = \frac{\left[\sum_{i=1}^{n=10} \left| a_{i,t+1} - [a_{i,t} \times (1 - C)] \right|\right] / 2}{\sum_{i=1}^{n=10} a_{i,t+1}}, \quad 0 \leq R \leq 1$$

Where 'a' is the expenditures per area of institutional operations and 'C' is the percent decrease in total organizational expenditures from time t to time t+1. The areas of institutional operations are: 1) instruction, 2) research, 3) public service, 4) academic support, 5) libraries, 6) student services, 7) institutional support, 8) plant operation and maintenance, 9) scholarships and fellowships, and 10) educational and general mandatory transfers. The reallocation score can range from 0 to 1, where 0 indicates a pure, across-the-board cutback and 1 indicates a total reallocation of resources to one area of operation. A score of .10 would indicate that ten percent of an institution's resources were reallocated among operational areas between time t and time t+1.

The severity of revenue decline variable (S) is the percentage decrease in total current dollar revenues from time t to time t+1. The

duration of decline is represented by three variables: 1) the number of consecutive years of declining revenues (D), 2) the cumulative percent decrease in revenues during the current episode (CS), and 3) the mean annual percent decrease of revenues during the current episode (MS). The revenue history variable is represented by the cumulative percentage decrease in revenues during the past episode of revenue decline (PS). Institutions that had not experienced decreasing revenues prior to the current episode received a value of zero on this variable. Data for 1973-74 and 1974-75 were included to calculate these last four variables so that it was possible for D, CS, MS, and PS to have non-zero values during the first year included in the analysis, which was 1976-77. Institutional control (C) was operationalized as a dummy variable, with public institutions being coded "0" and private institutions being coded "1". A dummy variable was also included to represent institutional type (T) to control for differences between two and four-year institutions. Two-year institutions were coded "0" and four-year institutions were coded "0".

Analyses

The hypotheses were tested by regressing the reallocation variable on the seven independent variables (S, D, CS, MS, PS, C, T). Observations for each of the years were pooled into a single analysis. As a result, an institution could appear as five separate observations if its revenues decline from one year to the next during each of the years included in the study. Preliminary analyses indicated that neither autocorrelation or heteroscedasticity were problems, making ordinary least squares regression appropriate.

Results

Table 11 presents percentage decrease in constant dollar revenues for the population of colleges and universities between 1976-77 and 1980-81. Of the total population across the period, 2,907 institutions had complete revenue data. Overall, approximately one-third of the institutions in the sample experienced decreasing constant dollar revenues from one year to the next. The table also indicates that over 50 percent of the revenue decreases were five percent or less.

Table 12 presents the distribution of institutions by the percent resource reallocation for the period between 1976-77 and 1980-81. Only 82.2 percent of the institutions for which revenue data were available also had complete expenditure data, accounting for the differences in the number of institutions in the year columns. This table shows that minimal reallocation of resources occurred in most institutions experiencing declining revenues. 54.1 percent of the institutions reallocated five percent or less of their resources between functional areas during a period of declining revenues. The results also show that 5.5 percent of the institutions used pure across-the-board cuts. The unusual aspect of this finding is that 79 percent of the across-the-board cuts occurred during 1980-81, which may reflect the increased incidence of decreased state appropriations to public institutions and increased mid-year budget revisions with the onset of the 1980-82 recession. Overall, these two tables show that the incidence of declining revenues was widespread throughout the population of colleges and universities, and that the proportion of resources reallocated in response was fairly low.

Table 11

Number of Institutions by
Percent Revenue Decrease, 1976-77 to 1980-81

Percent Revenue Decrease	1976-77	1977-78	1978-79	1979-80	1980-81	Total	%
1-5%	548	542	629	627	584	2633	55.6
6-10%	249	214	254	209	183	1109	23.4
11-15%	103	89	118	86	71	467	9.9
16-20%	53	44	53	34	35	219	4.6
21-25%	19	20	18	20	26	103	2.2
26-30%	19	14	15	11	13	72	1.5
31-35%	9	9	5	9	3	35	.7
36-40%	4	11	4	7	1	27	.6
≥ 41%	27	12	15	10	9	73	1.5
	1031	955	1111	1013	925	4738	100.0

Table 12

Number of Institutions by
Percentage Resource Reallocation, 1976-77 to 1980-81

Percent Reallocation	1976-77	1977-78	1978-79	1979-80	1980-81	Total	%
0%	18	3	21	3	171	216	5.5
1-5%	279	352	436	421	404	1892	48.6
6-10%	216	169	213	182	147	927	23.8
11-15%	130	67	105	78	55	435	11.2
16-20%	52	35	48	34	33	202	5.2
21-25%	23	21	26	18	9	97	2.5
26-30%	9	5	8	8	7	37	.9
31-35%	6	5	7	5	6	29	.7
36-40%	5	4	4	3	6	22	.6
≥ 41%	9	5	10	5	7	36	.9
	747	666	878	757	845	3893	99.9

Table 13 presents the results of the regression analysis. Examination of the standardized regression coefficients shows that the percent decrease in revenues was the best predictor of resource reallocation. The results indicate that the greater the decrease in revenues, the greater the extent to which reallocation occurred, supporting the first hypothesis. The institutional control variable was also a significant predictor of resources reallocation. Private institutions were found to reallocate more resources than public institutions, supporting the fourth hypothesis.

Of the three variables representing the duration of decline, only the number of consecutive years of declining revenues was found to have a significant negative relationship with reallocation. This indicates that the extent to which resources are reallocated is somewhat dependent on the length of a decline episode but not on the cumulative or mean annual severity of the episode. Overall, the findings for these variables provide partial support for the second hypothesis.

Institutional type was also found to be significantly related to resource reallocation. The sign of the coefficient indicates that two-year institutions engage in more reallocation than four-year institutions. This finding may be related to the fact that two-year institutions face more turbulent economic and enrollment environments as compared to four-year institutions, and, by nature, have to be more adept at realigning themselves with prevailing environmental conditions. (See Zammuto, 1983 and Rusk, Leslie and Brinkman, 1982 for a discussion of some of the relevant factors.)

Finally, the insignificant coefficient for the past revenue history variable indicates that having had past experience with cutback

Table 13

Regression Analysis

Dependent Variable	
Percent Resource Reallocation	($F=86.9$, $p \leq .0001$, $R^2=.143$)
Independent Variables	
Percent decrease in total revenues	-.289**
Institutional control	.066**
Number of consecutive years of declining revenues	-.061*
Mean annual percent decrease in revenues during current episode	.052
Institutional type	.051*
Cumulative percent decrease in revenues during current episode	.029
Cumulative percent decrease in revenues during past episode	.020

*$p \leq .01$

**$p \leq .001$

management does not appear to make administrators more likely to engage in selective cuts in the future. We expected that some institutional learning would occur as administrators gained experience with the cutback process, and that selectivity in making cuts and reallocating resources become more pronounced. As such, the results do not support the third hypothesis.

Work is now underway to determine how the reallocation process affects different areas of institutional operations (i.e., instruction, research, student services, institutional support, etc.). Preliminary results indicate that the cutback/reallocation process is fairly complex. Further analyses will determine the extent to which there are variations in the reallocation of resources across functional areas, and how these variations are related to the severity of revenue decline encountered, institutional type, and institutional control. We expect that the major payoff will come when HEGIS enrollment and revenue data are available for the complete set of years covered in the survey study. Once these data are available, it will be possible to conduct analyses that determine how the perceptions of individuals within an institution are affected by the reallocation process, how differences in organizational form and function affect reallocation, and what the effect of reallocation is on subsequent institutional performance.

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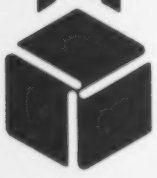
An Assessment of the Performance of Colleges and Universities



National Center for Higher Education Management Systems
P.O. Drawer P Boulder, CO 80302

Dear Respondent:

This questionnaire is part of a national study of performance in colleges and universities conducted by the National Center for Higher Education Management Systems. Several administrators, faculty department heads, and trustees at your institution are completing this instrument. You were selected as a respondent because of the position you hold at this school.

We are seeking your perceptions of the *overall* institution rather than information about one particular department or program. The responses of all individuals will remain strictly confidential. The data will be analyzed at NCHEMS in Boulder, Colorado, and all individual responses will be aggregated. In addition, the name of your institution will be revealed only to individuals at your school in the feedback reports to be provided at the conclusion of the study. You will be able to compare your institution with other similar schools, but the other schools will be described on the basis of their general characteristics, not by name.

The questionnaire is designed to be mailed back to NCHEMS without needing an envelope. On the back cover is printed the address of NCHEMS, along with a sticker identifying your institution as the return address. Just seal up the questionnaire and drop it in the mail. We will pay the return postage. You will find three peel-off stickers included with the questionnaire for your use in sealing up the questionnaire prior to mailing it.

Please complete the questionnaire at your earliest convenience; if possible, we would like it within 10 days of when you received it. Previous respondents have averaged 20 minutes to complete the questionnaire, so despite its length, we hope you find the questions interesting and thought-provoking. If you have questions or comments, please feel free to contact Dr. Kim Cameron at (303) 497-0368. Thank you in advance for your cooperation.

SECTION 1: Changes in the Institution's External Environment

The following questions concern changes in conditions outside your institution over the past few years. Please circle the number to the right of each statement that best reflects your institution's experiences since 1979-80.

	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree	
1. Major factors outside our institution that affect its enrollments have become more predictable over the past few years.	1	2	3	4	5	-10
2. Major factors outside the institution that affect its revenues have become less predictable over the past few years.	1	2	3	4	5	-11
3. Competitive actions of other colleges and universities have become more predictable over the past few years.	1	2	3	4	5	-12
4. The tastes and preferences of students have become harder to forecast over the past few years.	1	2	3	4	5	-13
5. Competitive actions of other colleges and universities now affect this institution in more areas (e.g., price, programs, area served) than in the past.	1	2	3	4	5	-14
6. Competition with other colleges and universities for student enrollments has increased over the past few years.	1	2	3	4	5	-15
7. The number of potential students from whom our institution can recruit has increased over the past few years.	1	2	3	4	5	-16
8. Financial resources have become more difficult to obtain over the past few years.	1	2	3	4	5	-17

SECTION 2: Decreasing Enrollments

This section is concerned with whether your institution has experienced decreasing full-time equivalent enrollments during any of the academic years since 1979-80.

1. To the best of your knowledge, did full-time equivalent student enrollments decrease from one year to the next during any of the academic years from 1979-80 to 1982-83?

_____ (1) Yes
_____ (2) No -19

If you answered "no" to the above question, please skip to Section 3 on the following page. If you answered "yes," please complete the remaining items in this section.

2. Please check the years in which you believe that full-time equivalent enrollments decreased from those of the previous year.

_____ 1979-80 _____ 1980-81 _____ 1981-82 _____ 1982-83 -20 21 22 23

Please circle the number to the right of each statement that best reflects your institution's experiences during its most recent episode of decreasing enrollments.

	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree	
3. Decreasing enrollments were inevitable at that time.	1	2	3	4	5	-24
4. Decreasing enrollments presented an immediate threat to the viability of this institution.	1	2	3	4	5	-25
5. Predictions of decreasing enrollments provided adequate lead time to take actions that minimized their impact.	1	2	3	4	5	-26
6. Decreasing enrollments were a short-term problem.	1	2	3	4	5	-27

7. Please indicate in the space below the major factors that caused enrollments to decrease at your institution.

-28 29 30 31 32 33

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SECTION 3: Decreasing Revenues

This section is concerned with whether your institution has experienced decreasing revenues, adjusted for inflation, during any of the academic years since 1979-80.

1. To the best of your knowledge, did revenues, adjusted for inflation, decrease from one year to the next during any of the academic years from 1979-80?

_____ (1) Yes
_____ (2) No —39

If you answered "no" to the above question, please skip to Section 4, which begins on this page. If you answered "yes," please complete the remaining items in this section.

2. Please check the years in which you believe that revenues, adjusted for inflation, decreased from those of the previous year.

_____ 1979-80 _____ 1980-81 _____ 1981-82 _____ 1982-83 —36 37 38 39

Please circle the number to the right of each statement that best reflects your institution's experiences during its most recent episode of decreasing revenues.

	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree	
3. Decreasing revenues were inevitable at that time.	1	2	3	4	5	—40
4. Decreasing revenues presented an immediate threat to the viability of the institution.	1	2	3	4	5	—41
5. Predictions of decreasing revenues provided adequate lead time to take actions that minimized their impact.	1	2	3	4	5	—42
6. Decreasing revenues were a short-term problem.	1	2	3	4	5	—43

7. Please indicate in the space below the major factors that caused revenues to decrease at your institution.

_____ —44 45 46 47 48 49

SECTION 4: Institutional Characteristics

In this section, we are asking for your impressions of some general characteristics of your institution. Please answer each item. If you are not sure, make your best guess.

	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree	
1. This institution has many administrators performing specialized functions.	1	2	3	4	5	—51
2. Formal policies and rules govern most activities at this institution.	1	2	3	4	5	—52
3. This institution has a special identity, unlike any other in higher education.	1	2	3	4	5	—53
4. There is a general sense that this institution has a distinctive purpose to fulfill.	1	2	3	4	5	—54
5. The academic programs offered here reflect the mission of the institution.	1	2	3	4	5	—55
6. People associated with this institution share a common definition of its mission.	1	2	3	4	5	—56
7. Those who make a personal or financial investment in this institution believe that they receive an ample return.	1	2	3	4	5	—57
8. The activities of the various units in this institution are loosely coordinated or loosely coupled.	1	2	3	4	5	—58
9. Major decisions are very centralized.	1	2	3	4	5	—59
10. Long-term planning is neglected.	1	2	3	4	5	—60

Institutional Characteristics (continued)

	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree	
11. Innovative activity is increasing.	1	2	3	4	5	–61
12. Top administrators are often scape goats.	1	2	3	4	5	–62
13. There is a lot of resistance to change in this school.	1	2	3	4	5	–63
14. There is a great deal of turnover in administrative positions.	1	2	3	4	5	–64
15. Morale is increasing among members of this institution.	1	2	3	4	5	–65
16. We have no place that we could cut expenditures without severely damaging the school.	1	2	3	4	5	–66
17. Special interest groups within the institution are becoming more vocal.	1	2	3	4	5	–67
18. Top administrators have high credibility.	1	2	3	4	5	–68
19. When cutbacks occur, they are done on a prioritized basis.	1	2	3	4	5	–69
20. Conflict is increasing within this institution.	1	2	3	4	5	–70
21. Top administrators believe that factors outside the institution largely determine its condition.	1	2	3	4	5	–71
22. Top administrative positions are now held by individuals who were promoted from within the institution.	1	2	3	4	5	–72

SECTION 5. Type of Institution

These questions relate to the type of organization that your institution is most like. Each of these items contains four descriptions of institutions of higher education. Please distribute 100 points among the four descriptions depending on how *similar* the description is to your school. None of the descriptions is any better than the others; they are just different. *For each question, please use all 100 points.*

FOR EXAMPLE:

In question 1, if institution A seems very similar to mine, B seems somewhat similar, and C and D do not seem similar at all, I might give 70 points to A and the remaining 30 points to B.

1. **Institutional Characteristics** (Please distribute 100 points) _____

_____ points for A — Institution A is a very **personal** place. It is like an extended family. People seem to share a lot of themselves.

_____ points for B — Institution B is a very **dynamic** and entrepreneurial place. People are willing to stick their necks out and take risks.

_____ points for C — Institution C is a very **formalized and structured** place. Bureaucratic procedures generally govern what people do.

_____ points for D — Institution D is very **production oriented.** A major concern is with getting the job done. People aren't very personally involved. –74-75 76-77 78-79 80-81

2. **Institutional Leader** (Please distribute 100 points) _____

_____ points for A — The head of institution A is generally considered to be a **mentor,** a **sage,** or a **father or mother figure.**

_____ points for B — The head of institution B is generally considered to be an **entrepreneur,** an **innovator,** or a **risk taker.**

_____ points for C — The head of institution C is generally considered to be a **coordinator,** an **organizer,** or an **administrator.**

_____ points for D — The head of institution D is generally considered to be a **producer,** a **technician,** or a **hard-driver.** –82-83 84-85 86-87 88-89

Type of Institution (continued)

3. **Institutional "Glue"** (Please distribute 100 points)

_____ points for A — The glue that holds institution A together is **loyalty and tradition.** Commitment to this school runs high.

_____ points for B — The glue that holds institution B together is a **commitment to innovation and development.** There is an emphasis on being first.

_____ points for C — The glue that holds institution C together is **formal rules and policies.** Maintaining a smooth-running institution is important here.

_____ points for D — The glue that holds institution D together is the emphasis on **tasks and goal accomplishment.** A production orientation is commonly shared. —90-91 92-93 94-95 96-97

4. **Institutional Emphases** (Please distribute 100 points)

_____ points for A — Institution A emphasizes **human resources.** High cohesion and morale in the school are **important.**

_____ points for B — Institution B emphasizes **growth** and **acquiring new resources.** Readiness to meet new challenges is important.

_____ points for C — Institution C emphasizes **permanence and stability.** Efficient, smooth operations are important.

_____ points for D — Institution D emphasizes **competitive actions and achievement.** Measurable goals are important. —98-99 100-101 102-103 104-105

SECTION 6: Institutional Strategy

The following section deals with the strategy your institution is pursuing. Please indicate the extent to which you agree or disagree with each item, based on your own perceptions.

	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree	
1. We are making our academic programs more diverse.	1	2	3	4	5	—107
2. We are changing the composition of our student body, making it more diverse.	1	2	3	4	5	—108
3. We are increasing the investment of the college in functions that deal with external people (admissions, development, government relations, and others).	1	2	3	4	5	—109
4. This institution tries to insulate itself from pressures in the environment.	1	2	3	4	5	—110
5. This institution tries new activities or policies, but not until after others have found them successful.	1	2	3	4	5	—111
6. This institution is likely to be the first to try new activities or policies.	1	2	3	4	5	—112
7. Our top administrators educate important outsiders about the value of the institution in order to improve its legitimacy in their eyes.	1	2	3	4	5	—113
8. This institution tends to do more of what it does well, to expand in areas we have expertise.	1	2	3	4	5	—114
9. This institution establishes new domains of activity.	1	2	3	4	5	—115
10. We are increasing the quality of the individuals in top administrative positions.	1	2	3	4	5	—116
11. Top administrators emphasize finding new money, more so than saving money, for a balanced budget.	1	2	3	4	5	—117
12. The top administrative team has developed multi-year stategies to achieve long-term institutional objectives.	1	2	3	4	5	—118
13. The top administrative team receives rapid and accurate feedback about enrollment and financial conditions.	1	2	3	4	5	—119
14. The top administrative team provides incentives for conserving resources.	1	2	3	4	5	—120

Institutional Strategy (continued)

15. Of the four actions listed below, which one is the **most likely** response of this institution to changes in the outside world? (check one response)

    _____ 1. Change the institution's policies and procedures
    _____ 2. Change the institution's image through communication
    _____ 3. Change the kinds of students, suppliers, or donors we deal with
    _____ 4. Weather any storm, making no changes —121

16. Of the four actions listed below, which one is the **least likely** response of this institution to changes in the outside world? (check one response)

    _____ 1. Change the institution's policies and procedures
    _____ 2. Change the institution's image through communication
    _____ 3. Change the kinds of students, suppliers, or donors we deal with
    _____ 4. Weather any storm, making no changes —122

SECTION 7: Institutional Decision Processes

The following questions deal with the decision process used at the institution for allocating resources—whether the resources are staff positions, dollars, space, or other valuable items. Please indicate the extent to which you agree or disagree with each item.

	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree	
1. This institution has a standard set of procedures it uses to make resource allocation decisions.	1	2	3	4	5	—124
2. One individual at this institution makes all resource allocation decisions of any consequence.	1	2	3	4	5	—125
3. People at this institution make resource allocation decisions collegially.	1	2	3	4	5	—126
4. A rational process is used to make resource allocation decisions at this institution.	1	2	3	4	5	—127
5. No particular pattern characterizes the process by which resource allocation decisions are made here.	1	2	3	4	5	—128
6. Resource allocation decisions are political, based on the relative power of those involved.	1	2	3	4	5	—129
7. Resource allocation is decided bureaucratically at this institution.	1	2	3	4	5	—130
8. Resource allocation is decided autocratically.	1	2	3	4	5	—131
9. Resource allocation is a matter for group discussion and consensus.	1	2	3	4	5	—132
10. Resource allocation decisions are based on what objectively seems best for this institution overall.	1	2	3	4	5	—133
11. Resource allocation is decided by coincidence; it is a matter of organized anarchy.	1	2	3	4	5	—134
12. Persuasion, negotiation, and coalition-building are examples of what determines resource allocation.	1	2	3	4	5	—135

SECTION 8: Performance and Actions of the Institution

The items in this section ask about the performance and actions of your institution. If you are not sure of the item, please make your best guess.

To what extent are the following characteristics typical of this institution?

	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree	
1. One of the outstanding features of this institution is the opportunity it provides students for personal development in addition to academic development.	1	2	3	4	5	—137
2. This college is highly responsive and adaptive to meeting the changing needs of its external constituencies.	1	2	3	4	5	—138
3. This college has a very high ability to obtain financial resources in order to provide a high quality educational program.	1	2	3	4	5	—139
4. When hiring new faculty members, this college can attract the leading people in the country in their respective fields to take a job here.	1	2	3	4	5	—140
5. There seems to be a feeling that dissatisfaction is high among students at this institution.	1	2	3	4	5	—141
6. There have been relatively large numbers of students either drop out or not return because of dissatisfaction with their educational experiences here.	1	2	3	4	5	—142
7. I am aware of a large number of student complaints regarding their educational experience here as registered in the campus newspaper, meetings with faculty members and administrators, or other public forums.	1	2	3	4	5	—143
8. There is a very high emphasis on activities outside the classroom designed specifically to enhance students' **personal, non-academic** development.	1	2	3	4	5	—144
9. There is a very high emphasis on institution-community or institution-environment activities.	1	2	3	4	5	—145
10. Students develop and mature in non-academic areas (e.g., socially, emotionally, culturally) to a very large degree directly as a result of their experiences at this institution.	1	2	3	4	5	—146
11. A very large number of community-oriented programs, workshops, projects, or activities were sponsored by this institution last year.	1	2	3	4	5	—147

12. Think of last year's graduating class at this institution. Please rate the academic attainment or academic level achieved by that class as a whole. (Select one)

_____ 1) That class is among the very top classes in the country.

_____ 2) That class is well above average.

_____ 3) That class is slightly above average.

_____ 4) That class is about average.

_____ 5) That class is slightly below average.

_____ 6) That class is below average.

_____ 7) That class is near the bottom of classes across the country. —148

13. Estimate what percent of the graduates from this institution go on to obtain degrees in graduate or professional schools.

_____ 1) From 91% to 100% of the students here go on for advanced degrees.

_____ 2) From 76% to 90% go on.

_____ 3) From 61% to 75% go on.

_____ 4) From 46% to 60% go on.

_____ 5) From 31% to 45% go on.

_____ 6) From 16% to 30% go on.

_____ 7) From 0 to 15% go on to obtain advanced degrees. —149

Performance and Actions of the Institution (continued)

Please use the following scale in responding to the following questions

7 — All	**5** — More than half	**3** — Less than half	**1** — None
6 — A large majority	**4** — About half	**2** — A small minority	

14. _____ How many students would you say engage in extra academic work (e.g., reading, studying, writing) over and above what is specifically assigned in the classroom. —150

15. _____ What proportion of the students who graduated from this institution last year and entered the labor market obtained employment in their major field of study? —151

16. _____ How many students would you say attend this college to fulfill definite career or occupational goals as opposed to attending for social, athletic, financial, or other reasons? —152

17. _____ Of those students who obtained employment after graduating from this institution, for how many of them was career training received at this institution important in helping them obtain their jobs? —153

18. _____ If given the chance of taking a similar job at another school of his or her choice, how many faculty members do you think would opt for leaving this school? —154

19. _____ If given the chance of taking a similar job at another school of his or her choice, how many administrators do you think would opt for leaving this school? —155

20. _____ Estimate how many faculty members at this institution are personally satisfied with their employment. —156

21. _____ Estimate how many administrators at this college are personally satisfied with their employment. —157

22. _____ How many faculty members at this institution would you say published a book or an article in a professional journal, or displayed a work of art in a show last year? —158

23. _____ What proportion of the faculty members would you estimate teach at the "cutting edge" of their field—i.e., require **current** journal articles as reading, revise syllabi at least yearly, discuss current issues in the field, etc.? —159

24. _____ How many faculty members at this college are actively engaged now in professional development activities—e.g., doing research, getting an advanced degree, consulting, etc.? —160

25. _____ Colleges may be rated on the basis of their relative "drawing power" in attracting top high school students. In relation to other colleges with which it competes, what proportion of the top students attend this institution rather than the competition? —161

This section asks you to rate your perceptions of the general day-to-day functioning of the overall institution. Please respond by **circling** the number that best represents your perceptions of each item. If you agree strongly with one end of the scale, circle a number closer to that end of the scale. If you feel neutral about the item, circle a number near the middle of the scale.

FOR EXAMPLE:

How is the weather in this town?

warm, bright, and sunny — 1 (2) 3 4 5 6 7 — cold, wet, and dismal

How do you perceive the following?

26. **Student/faculty relationships**

unusual closeness, lots of informal interaction, mutual personal concern — 1 2 3 4 5 6 7 — no closeness, mostly instrumental relations, little informal interaction —162

27. **Equity of treatment and rewards**

people treated fairly and rewarded equitably — 1 2 3 4 5 6 7 — favoritism and inequity present, unfair treatment exists —163

Performance and Actions of the Institution (continued)

28. **Organizational health of the college**

college runs smoothly, healthy organization, productive internal functioning — 1 2 3 4 5 6 7 — college runs poorly, unhealthy organization, unproductive internal functioning —164

29. **General levels of trust among people here**

high suspicion, fear, distrust, insecurity — 1 2 3 4 5 6 7 — high trust, security, openness —165

30. **Conflicts and friction in the college**

large amount of conflict, disagreements, anxiety, friction — 1 2 3 4 5 6 7 — no friction or conflicts, friendly, collaborative —166

31. **Recognition and rewards received for good work from superiors**

recognition received for good work, rewarded for success — 1 2 3 4 5 6 7 — no rewards for good work, no one recognizes success —167

32. **The amount of information or feedback you receive**

feel informed, in-the-know, information is always available — 1 2 3 4 5 6 7 — feel isolated, out-of-it, information is never available —168

SECTION 9: Respondent Demographics

These items ask for some personal demographic information. This information will not be used to try to identify you, rather it simply will help us in our analysis of the questionnaire data. Please answer each item.

1. In what year were you born? _____ —170 171 172 173

2. In how many organizations have you worked in your professional career? _____ —174 175

3. How many years have you held your current position? _____ —176 177

4. Are you male _____ or female _____ ? —178

5. Have you received degrees (i.e., bachelors, masters, or doctorate) in any of the following fields? (please check all that apply)

_____ 1) Business administration
_____ 2) Educational administration
_____ 3) Public administration
_____ 4) Health Care administration
_____ 5) Personnel or Industrial administration
_____ 6) Other administration fields —179

6. In what field did you receive your last degree?

_____ 1) Humanities (e.g., literature, languages)
_____ 2) Fine Arts (e.g., music, sculpture)
_____ 3) Physical Sciences (e.g., physics, chemistry)
_____ 4) Biological Sciences (e.g., zoology, botany)
_____ 5) Social Sciences (e.g., sociology economics)
_____ 6) Mathematics and Computer Sciences
_____ 7) Professional Fields (e.g., law, engineering)
_____ 8) Administration Fields (educational, business)
_____ 9) Other _____ —180

7. How many years have you been affiliated with this institution? _____ —181 182

8. What is your highest academic degree?

_____ 1) Doctorate or other terminal degree
_____ 2) Masters
_____ 3) Bachelors
_____ 4) Associate —183

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Supplemental Objective Data

Dear Institutional Researcher,

The questions in the attached booklet deal with your personal views and have been asked of several individuals associated with this institution. The questions on both sides of this page deal with facts and are asked only of you, in your official capacity. Please answer all items to the best of your ability. After responding, please leave this page in the questionnaire booklet, seal, and mail it as directed on the cover. Thank you.

Directions. Please indicate whether each of the following events has occurred here since the 1978-79 academic year. Circle "1" for yes, "0" for no.

		Yes	No	
1.	Restrict travel, telephone, and supply purchases	1	0	10
2.	Lower admissions standards	1	0	11
3.	Postpone planned equipment purchases	1	0	12
4.	Cut library budget	1	0	13
5.	Tighten tenure requirements	1	0	14
6.	Reduce support staff through attrition	1	0	15
7.	Reduce energy costs through conservation	1	0	16
8.	Employ part-time in place of full-time faculty	1	0	17
9.	Reduce secretarial staff	1	0	18
10.	Defer maintenance and renovation projects	1	0	19
11.	Increase faculty workload	1	0	20
12.	Reduce number of course offerings	1	0	21
13.	Increase tuition, room, and board charges beyond inflation rate	1	0	22
14.	Require larger and/or earlier tuition deposits	1	0	23
15.	Reduce the number of student services personnel	1	0	24
16.	Enter contractual agreements with other agencies to reduce costs	1	0	25
17.	Eliminate general fund support of intercollegiate athletics	1	0	26
18.	Borrow money to cover operating shortfalls	1	0	27
19.	Lease, convert, or close dorm space	1	0	28
20.	Impose a hiring freeze on faculty positions	1	0	29
21.	Eliminate off-campus programs	1	0	30
22.	Eliminate off-campus teaching sites	1	0	31
23.	Declare a state of financial exigency	1	0	32
24.	Terminate tenured faculty	1	0	33

OVER, PLEASE

		Yes	No	
25.	Merge institution with another institution	1	0	34
26.	Establish new off-campus teaching sites	1	0	35
27.	Expand hours of the day in which courses are offered	1	0	36
28.	Expand days on which classes are taught	1	0	37
29.	Offer degree levels not offered before	1	0	38
30.	Enter contractual agreements with other agencies to cooperate in offering courses	1	0	39
31.	Increase in-state student recruitment efforts	1	0	40
32.	Increase out-of-state student recruitment efforts	1	0	41
33.	Develop or increase courses for part-time students	1	0	42
34.	Develop or increase the number of adult leisure courses	1	0	43
35.	Develop or increase the number of continuing education courses	1	0	44
36.	Does the school have a brief phrase or statement, commonly used, that summarizes its mission?	1	0	45
	If yes, what is it?_____			
37.	Does the president have a brief phrase or statement, commonly used, that summarizes his or her current priorities for the school?	1	0	46
	If yes, what is it?_____			

38. Please list below the institutions that are your major competitors in recruiting new students:

	FICE. Do not mark here.	
1._____	_____	47-52
2._____	_____	53-58
3._____	_____	59-64
4._____	_____	65-70
5._____	_____	71-76
6._____	_____	77-82
7._____	_____	83-88
8._____	_____	89-94

Thank you again for your assistance. Please return inside questionnaire booklet.

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